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JAN 21 1928

PAPER TRADE JOURNAL

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International Paper Co. Installs *Beloits*

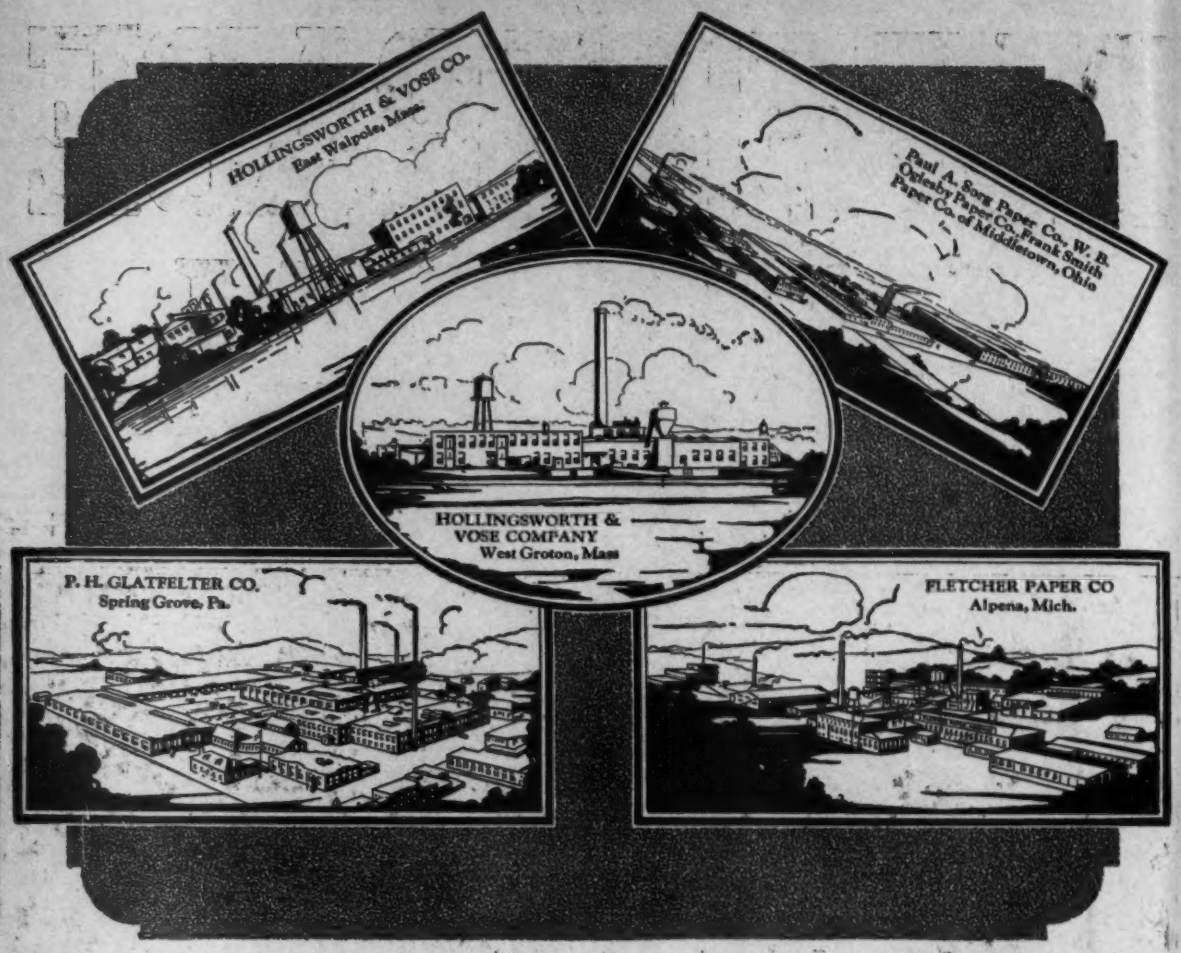
Famous Removable Fourdriniers Are Specified for the International's New, Modern, Up-to-Date Mill—Aldrich High Speed Shake Also Specified

CAMDEN, Arkansas, January 18, 1928.—Two newest type 210-inch Beloit Removable and adjustable fourdriniers with Aldrich high-speed shake are being installed in the International Paper Company's new modern mill at Camden, Arkansas.

Two similar machines in 162-inch width and a Beloit High-Speed Cylinder Board machine are operating at the International's Louisiana Mill in Bastrop, La. All four fourdrinier machines are of the latest, modern design and are used in the making of Kraft paper; the Beloit board machine is used in making test liner.

The selection of the Removable type of fourdrinier for this new mill was made because of the facility with which wire changes can be made, utilizing the regular crew and eliminating dismantling and re-assembling with its inherent back-breaking labor. The Aldrich Shake was selected because of its ability to make better paper at higher speeds.

The bigger the problem, the greater the progressive engineering service that the Beloit Iron Works of Beloit, Wis., can render.


HOLLINGSWORTH & VOSE CO.
East Walpole, Mass.
Paul A. Sorg Paper Co., W. B. Ogilvie Paper Co., Frank Smith Paper Co. of Middletown, Ohio
HOLLINGSWORTH & VOSE COMPANY
West Groton, Mass
P. H. GLATFELTER CO.
Spring Grove, Pa.
FLETCHER PAPER CO
Alpena, Mich.

SOME *of* the Mills using

EBG

Liquid Chlorine

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The patronage extended EBG Liquid Chlorine is due to more than the fact that it is a quality product.

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Make 1928 an E B G year!

Electro Bleaching Gas Co.

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Main Office, 9 East 41st Street, New York

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SIXTH YEAR

Published Every Thursday by the

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AN IMPROVEMENT IN QUALITY

We have supplied this washed Georgia Clay to the book paper mills for fifteen years.

It is an untinted clay and its natural color shows considerable improvement in the part of the deposit we have now worked into.

Also the grit content is carefully controlled in the washing process and is showing very low tests.

The quality is uniform.

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50 E. 42nd St.
New York

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXVI, No. 3 — Thursday, January 19, 1928

Paper Production Decreases In November

Total Production of Paper for the Month as Reported to the American Paper and Pulp Association Was 558,061 Tons as Compared With 571,066 Tons for October, a Decrease of 2 Per Cent—Total Production of All Grades of Pulp as Compared with October, Showed Increase of 3 Per Cent.

The total production of paper for the month of November, as reported to the American Paper and Pulp Association, was 558,061 tons as compared with 571,066 tons for October, a decrease of 2 per cent.

Sharpest Decline in Felts and Building

The sharpest individual decline in production was in the Felts and Building grade which fell off 17 per cent while the other grades showed decreases of from 1 to 7 per cent.

Pulp Production Increases

Total production of all grades of pulp totaled 190,804, a 3 per cent increase over the production of 185,419 tons in October.

COMPARATIVE REPORT OF OPERATIONS OF IDENTICAL MILLS FOR THE MONTH OF NOVEMBER, 1927

Grade	Number of mills	Practical production cap.	Production	Per cent of capacity	Shipments	Per cent of capacity	Stocks on hand end of month
News Print	71	149,058	117,222	79	116,612	78	28,543
Book	66	113,516	96,006	85	94,112	83	55,212
Paperboard	116	264,238	201,366	76	200,909	76	41,976
Wrapping	73	62,498	51,033	82	50,294	80	46,871
Bag	20	15,496	12,695	82	12,479	81	8,885
Fine	74	33,670	29,332	87	29,916	89	40,138
Tissue	46	14,352	13,624	95	13,145	92	13,951
Hanging	9	7,202	5,858	81	5,961	83	3,588
Felts and Bldg.	13	13,702	9,090	66	8,936	65	2,858
Other Grades	60	29,510	21,835	74	22,779	77	17,706
Total—All Grades		705,242	558,061	79	555,143	79	259,728

COMPARATIVE REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF NOVEMBER, 1927

Grade	Number of mills	On hand first of month	Production for month	Used during month	Shipped during month	On hand end of month
Groundwood pulp	85	95,815	85,361	85,703	3,717	91,756
Sulphite news grade	38	9,014	38,926	35,772	2,718	9,450
Sulphite, bleached	22	2,044	24,082	21,273	2,358	2,495
Sulphite, easy bleached	7	2,004	3,280	3,193	247	1,844
Sulphite, Mitscherlich	6	415	6,784	5,856	935	408
Sulphate pulp	10	2,899	15,926	14,391	1,516	2,918
Soda pulp	11	2,534	16,383	12,167	4,372	2,378
Pulp—Other grades	2	207	62	....	107	162
Total—All grades		114,932	190,804	178,355	15,970	111,411

PAPER REVIEW FOR ELEVEN MONTHS IN 1927

Grade	Number of mills	Production (net tons)	Shipments (net tons)	Stocks on hand end of month (net tons)
News print	71	1,367,595	1,352,073	28,543
Book (M. F. S. C. & Coated)	63	1,009,678	1,000,834	54,794
Paperboard (straw, fiber, leather, chip, box, etc.)	113	2,129,535	2,133,649	40,735
Wrapping (kraft, manila, fiber, etc.)	74	567,385	553,999	47,351
Bag (all kinds)	23	139,328	139,501	8,885
Fine (writing, bond, ledgers, etc.)	74	328,542	330,110	40,138
Tissue (toilet, crepe, fruit wrappers, etc.)	53	159,318	157,857	14,799
Hanging (No. 2 blank, oatmeal, tile, etc.)	9	62,954	62,323	3,588
Felts & building (roofing, sheathing, etc.)	13	112,508	111,961	2,858
Other grades (specialties not otherwise classified)	60	243,423	242,791	17,706
Total—All grades		6,120,266	6,085,098	259,397

WOOD PULP REVIEW FOR ELEVEN MONTHS IN 1927

Grade	Number of mills	Production	Used	Shipped	On hand end of month
Groundwood pulp	91	942,110	952,139	28,619	91,756
Sulphite, news grade	38	444,658	414,062	29,959	9,450
Sulphite, bleached	23	271,789	232,410	40,416	2,587
Sulphite, easy bleached	7	44,651	37,857	5,868	1,844
Sulphite, Mitscherlich	6	74,413	64,410	10,391	408
Sulphate pulp	10	183,480	166,801	15,987	2,918
Soda pulp	11	182,958	133,795	49,507	2,378
Pulp—Other grades	2	479	186	143	162
Total—All grades		2,144,538	2,001,660	180,890	111,503

To Build New Wood Room at Rumford

RUMFORD FALLS, Maine, January 16, 1928.—Work on the construction of a new wood room for the Paper Mill Division of the Continental Paper and Bag Mills Corporation was started last week and about $125,000 will be expended on its construction. This announcement was made by A. G. Stone, manager of the Paper Mill Division of the company.

The new room will be 60x118 feet and is being built under the supervision of Samuel E. Foster, mill engineer and it is expected that between 30 and 40 men will be employed on the work. The room is to be the most modern with all the newest and improved machinery in use.

News Print Organizations to Merge in Canada

Laurentide and St. Maurice Valley Interests to be Consolidated Under New Holding Company Entitled Canada Power & Paper Co., With Headquarters at Montreal—Amalgamation Brings Under Unified Control Mills Having More Than 1,400 Tons Daily Capacity

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 16, 1928.—The New Year has started out with another big strike in the process of consolidating the Canadian news print industry. Subject to approval by their respective shareholders, the Laurentide Company and the St. Maurice Valley Corporation will be merged under a new holding company named the Canada Power and Paper Company, with headquarters in Montreal. The amalgamation will bring under unified control mills having a daily capacity of more than 1,400 tons, those of the St. Maurice Valley Corporation group being about 1,000 tons a day, and those of the Laurentide Company approximating 400 tons per day.

Through Laurentide Company, Ltd., the new company will control Laurentide Power Company, Ltd., with an installed capacity of 165,000 h.p. hydro-electric energy at Grand'Mere on the St. Maurice River.

George H. Chahoon, the president of the Laurentide Company, will remain an active administrative head in the industry in which he has played such a prominent part for many years. Associated with him in the management of the new company will be George M. McKee, vice-president and managing director of St. Maurice Valley Corporation, whose success in the industry before and since joining the St. Maurice Valley Corporation, has been marked.

Under the plan there will be an exchange of debentures and common stock of the Canadian Power and Paper Corporation for outstanding common shares of the merging companies, on the basis of one share of common stock and one 5½ per cent debenture of Canada Power and Paper for each outstanding share of Laurentide and 2½ shares of the new company for each share of St. Maurice Valley. This will mean the issuance of $28,800,000 of debentures and 688,000 shares of no par common stock of which the full amount of debentures and 288,000 shares of common stock will go to Laurentide and 400,000 shares of stock to St. Maurice.

For the 13 months ended December 31, 1926, St. Maurice Valley, after generous appropriations and write-offs, showed earnings available on the common stock to the amount of $1,030,418, while Laurentide, for the fiscal period ended June 30, showed $1,747,491, applicable to the capital stock. This gives a total of $2,777,909, and as St. Maurice has since sold an additional $2,000,000 of 5½ per cent bonds, a further $55,000 must be deducted for interest on these, leaving $2,722,909 available for the new company. After deducting $1,584,000 for interest on the 5½ per cent debentures, the sum of $1,138,909 is shown available for the new common stock, or equivalent to around $1.65 a share. It must be remembered that the results for St. Maurice up to December 31, 1926, did not include any return from the operation of the two additional news print machines which were completed and started production at the beginning of 1927.

It will thus be seen that there will be a very substantial earning power behind the new common stock—very probably based on prospective results for the current periods, around $2.50 or $3 a share.

Mr. Chahoon, in his letter, says: "The bringing together of three large mills situated in close proximity in the valley of the St. Maurice River with contiguous limits which are peculiarly adapted to efficient and economical operation under one control is expected to produce substantial economies.

"The pulpwood resources available for the operations of all these properties, including the limits in the Ottawa Valley recently acquired by Laurentide-Ottawa Company, Ltd., a wholly-owned subsidiary of Laurentide Company, Ltd., are estimated to be sufficient to provide for all present requirements and also for future expansion as conditions may warrant."

Industry Developed to Safety Limit

The Hon. Charles Stewart, Minister of the Interior in the Dominion Government, in a review of the forest industries for 1927, says that Canada is now the greatest news print manufacturing country in the world, and exports more news print than all the other countries in the world combined. He further states that the industry in Canada has been developed to the safety limit, and that "Until we are more certain that our pulpwood supplies will sustain the industry on a permanent basis, there is no justification for continuation of the rather hectic expansion witnessed in the past few years. Rather, the time is more opportune for concentration of effort upon refinement of methods, and the more complete manufacture by Canadian mills of pulpwood extracted from Canadian forests."

Extension of Fraser Plant

The third fine paper machine being installed in the Fraser Company's sulphite paper mill at Madawaske, Me., should be in operation by February 1, and thereafter will add 70 tons per day to the fine paper output of that mill. A fourth machine, which will operate on light weight fine sulphite papers, and will add approximately 30 tons per day to the mill's production, is expected to be in operation by March 15. Work has already been started on the groundwood mill at Edmonston, N. B., and on changing over one of the dryers at Edmundston for the production of sulphite and groundwood board.

Discourages Export of St. Lawrence Power

The National Advisory Committee has prepared a report to be submitted to the Government on an important phase of the St. Lawrence Waterway question. The Committee places itself on record as opposed to the export of any power created on the St. Lawrence within Canadian territory. The salient features of the report are: Encouragement to private capital to develop the power on the national section, practically all of which is in the province of Quebec, and the stipulation that those private concerns assist financially in the deepening of that section of the river; recommendation that early steps be taken to open negotiations with the United States for a treaty governing joint deepening of the international section of the river between Lake Ontario and Cornwall; and commendation of the Government's stand in opposition to power export.

The most valuable water powers on the St. Lawrence are in the international section of the river below Cornwall. There are 2,250,000 horse power in the international section, which would be shared by Ontario and New York state, but in the Quebec section it is estimated by the engineers that the potential development is 2,900,000 horse power. The Soulanges section alone, embracing eighteen miles of rapids, and shoal water from Lake St. Francis to Lake St. Louis, is capable of developing 1,979,700 horse power, while the Lachine section, embracing Lake St. Louis and the rapids and shoals from that lake to Montreal harbor, a length of 23 miles, will produce 800,000 horse power. These are the sections that Montreal concerns are anxious to develop.

The engineers say in their report that if but one-half of the hydro-electrical machinery is installed when the first part of the program on the Soulanges section is initially constructed, leaving the other half to be installed as the demand for power develops, the initial expenditure required to open navigation and provide

202,000 horse power becomes $92,000,000. The whole scheme, which would produce 1,979,700 horse power, would cost $205,000,000.

For the Lachine section, the engineers' estimates are:

Recommended project for navigation alone, $53,000,000.

Power alone—First part, 435,000 installed horse power, $88,131,000; second part, $488,000 installed horse power, $41,406,000. Total, 923,000 installed horse power, $129,537,000.

Power subsequent to navigation—First part, 435,000 installed horse power, $81,247,000; second part, 488,000 installed horse power, $41,966,000. Total, 923,000 installed horse power, $123,213,000.

Colossal Hydro Project Pending

A project which is held in abeyance pending the consideration of the Committee's report on the St. Lawrence Deep Waterways plan is for the development of 2,000,000 h.p. on the St. Lawrence about 25 miles west of Montreal. This, it is said, will not only be the largest power development in Canada but also in the world.

The project is owned by the Beauharnois Light, Heat and Power Company, of which R. O. Sweezy is president. The plan is to utilize the head of waters between Lake St. Francis and Lake St. Louis. These lakes are nothing more than a broadening out of the St. Lawrence River and it is stated that by cutting a canal of 13 miles between the two the full head of 83 feet between the lakes could be utilized. Some of the biggest men in finance and industry on the continent are said to be in the syndicate headed by Mr. Sweezy. The proposed initial unit, it is said, has been contracted for by large electro-chemical electro-metallurgical and kindred industries. The project is said to have the entire sympathy of the Quebec Government, and the Dominion Government is said not to be unfavorable.

Bank Note Company Sold

Howard W. Pillow has purchased the British American Bank Note Company, with head office in Ottawa, from the Burland estate. Mr. Pillow became associated with the company in 1906 as Montreal representative, and on the death of Colonel Burland in 1914 became president. The company was incorporated in 1866, and does a large business in the printing of paper currency and stock certificates.

Mild Weather Hinders Logging

The continuance of the extraordinarily mild weather which has so far characterized this winter is beginning to cause serious loss to lumber and pulp companies, and has caused a temporary suspension in wood cutting in many districts. Winter roads in many cases have broken up through rain and there is a serious lack of snow everywhere, making movement in the woods extremely difficult. As a result many teams and men who would otherwise be busily employed are idle.

Incorporates in Delaware

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., January 12, 1928.—Western Paper Makers' Chemical Company, a Delaware corporation with an authorized capital of $5,000,000, fully paid up, has been organized to succeed the Western Paper Makers' Company of Michigan, according to announcement made by W. J. Lawrence, vice president and general manager.

The newly formed concern will take over all Michigan properties, also plants in Wisconsin, Indiana and Canada, as well as the immense resin properties in Florida and Georgia. An additional unit of the first magnitude, which is to be included in the chain will be the new chemical plant, at Marrero, the industrial district of New Orleans. Ten acres have been purchased and options taken on 15 additional acres. This unit will manufacture a complete line of chemicals and will serve the trade in the rapidly growing Louisiana and Texas fields.

W. J. Lawrence has just returned from a trip south and reports that work has started on the new plant and is being pushed forward rapidly. When completed, it will represent an outlay of approximately $250,000. Employment will be given 200 persons.

Price Bros. Absorb Donnacona

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 16, 1928.—As foreshadowed in the PAPER TRADE JOURNAL, the Donnacona Paper Company is to be absorbed by Price Bros. & Co., Ltd. It is announced that a new company of the same name is to be incorporated under the Quebec laws to take over the properties and that Price Bros. & Co. and associates will own the controlling interest, the Royal Securities Corporation, of Montreal, through whom the deal was made, retaining an interest.

The new company will own and control a total of approximately 5,400,000 cords, the major portion of which is located on the Jacques Cartier River and the balance being available for delivery by direct water shipment to the company's wharf at its mill.

Located as it is directly on the St. Lawrence, the Donnacona mill will be able, as required, to draw upon the large additional pulpwood reserve represented by Price Brothers' extensive limits on the south shore of the St. Lawrence, and which at present are operated only in conjunction with the latter company's sawmills in that territory.

The company has a developed power capacity of 5,000 h.p., and owns in addition water powers on the Jacques Cartier River having an estimated capacity of 35,000 h.p.

J. H. Price, president of Price Bros. & Co., will be president of the new company, and J. L. Apedaile, W. G. Mitchell, R. H. Nisbet and Arthur C. Price, all officials of Price Bros. & Co., will be directors, Mr. Apedaile becoming one of the vice-presidents of the new company.

The board will also include Ward C. Pitfield, vice-president of the Royal Securities Corporation, and Victor E. Mitchell, K.C., D.C.L., a director of Abitibi Power and Paper Company.

Management of the property will be in the hands of Robert P. Kernan, as vice-president, who for several years has been vice-president of the predecessor company.

A. G. Stone Made Mill Manager at Rumford

RUMFORD FALLS, Maine, January 16, 1928.—A. G. Stone, who since April 1, has been plant superintendent and production manager of the Paper Mills Division of the Continental Paper and Bag Mills Corporation, succeeds P. E. McCarthy as mill manager and on January 1, assumed these duties.

Mr. Stone came to Rumford from Menominee, Mich., where he was in charge of the mill of the Marinette-Menominee Paper Company. Previous to that time he was associated with the Spanish River Paper Company, of Espanola, Ont., the Peerless Paper Company of Dayton and the Great Northern Paper Company of Millinocket.

Announcement of the change in the management of the Paper Mill Division was made through notices posted throughout the mill and signed by Herman Elsas, president and general manager.

The day Mr. Stone assumed the duties as manager of the Paper Division of the Continental Paper and Bag Mills Corporation he was presented by the superintendents and foremen with three beautiful baskets of flowers which added greatly to the attractiveness and the cheer of his office. The good wishes accompanying these flowers were greatly appreciated by Mr. Stone, as they were evidences of the cooperation he would receive from the personnel of the organization.

McElwain Club Elects Officers

HOLYOKE, Mass., January 17, 1928.—The annual meeting of the McElwain Club consisting of officials in the Crocker McElwain Company and Chemical Paper Manufacturing Company, was held last week. R. F. McElwain, president of the Crocker McElwain Company, and Joseph Holjes, treasurer of the Chemical Company, spoke. Charles A. Tifft presided. These officers were elected: President, Fred Glanville; Vice President, Clifford Yerber; Secretary, Franklin Miles; Treasurer, George Johnstone; Board of Directors, Ernest Bush, Charles Smith, Hubert Desmarais and David Hosie.

Philadelphia Paper Trade Faces Bright Future

While Actual Orders Are Scarce at Present. the Volume of Inquiries for New Business Denotes Greater Activity in the Near Future—Local Paper Mills Are Operating Steadily, with Sufficient Orders on Hand to Maintain Present Working Schedule

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 16, 1928.—That the local paper trade and the industry generally is facing a brighter future is the consensus of opinion locally, as the early year discloses the market trend. While actual orders are scarce at this time there is evidence of growing interest in the numerous inquiries for future purchases. Present demands are for small lot supplies to hold over the day to day needs of the consumer except where large contract consignments have been acquired for the first half of the current year. As the inventory of stocks proceeds slowly the local dealers are holding off their 1928 mill orders pending clearance of the grades on hand. Some of the lines are being offered by the dealers under current market values in order to move slow selling goods. Supplies on hand are low so that a turn in business will necessitate a generous patronage of the mills for the grades that have been in demand throughout the late Fall.

Local Mills Fairly Busy

Local paper mills are reported to have a fair amount of orders for the initial 1928 production. Operations are steady, with sufficient orders in advance for maintaining a working schedule of present capacity for the entire month. Board mills have been holding to the pace of late December, with operations limited to 70 to 80 per cent of capacity. A few manufacturers of building boards are operating at full speed with much oversold conditions for some of the newest types of compo-boards that will be needed for the building trades. Roofing papers are also in demand with capacity operations in the mills catering to this class of trade. Tissue manufacturers, with the exception of nationally known producers of towels and toilet papers, selling direct to the consumers, are reported to have curtailed operations pending improvement in this branch of the industry.

Paper Stock Lull

Paper stock is moving very slowly from the local warehouses but though demand is limited accumulations are kept at a minimum due to the paucity of offerings to the wholesalers. Prices are steady. Mills have been buying only for immediate needs with little preparation for future stocking. Despite the dullness there is no softening in values on the commoner grades due to the difficulties in securing these raw materials.

Paper Men Join in Congressional Protest

With a representative assembly of those who are vitally interested in the protest to Congress for the reduction of the present postal rates for 2nd and 3rd class mail matter, the various factors entering into the problem were threshed out by speakers who were featured at the luncheon under auspices of the Philadelphia Paper Trade Association, in the Poor Richard Club last Monday. The meeting of paper men, printers, direct mail advertisers and users of this class of mail matter on an extensive scale was arranged under the direct supervision of Norbert A. Considine, of the Paper House of Pennsylvania, acting in behalf of the National Association of Direct Mail Users, in the absence of its chairman on the Postal Committee, George W. Ward, who now is recuperating from a sinous infection in Tuscon, Arizona, in co-operation with the Philadelphia Paper Trade Association and its allied industrial organizations.

The plan of the National Association of Mail Users, for the proposed protest against the current rates was laid before the Congressional representative from this district, John J. Connolly, who in turn is to present them to Congress through the Postal Committee, and its Pennsylvania member Congressman Griest, of Lancaster, Pa. In its protest against the present rates the National Association of Mail Users is asking for a return to the rates prevailing for this class of mail matter in 1923.

Congressman Connolly vouched for the presentation of the appeal for the return to the old rates to his colleagues in the legislative body and requested that a memoranda of the meeting be prepared for forwarding to Washington so that details of the needs for the former schedule may be accessible to the members of Congress and particularly to the Postal Committee. He promised to take the matter up with his constituent from the Lancaster district, Congressman Griest, who is a member of the Postal Committee concerned directly with this problem.

Mr. Considine occupied the attention of the meeting with his details of the effects on the paper and printing and allied industries of the higher rates and expressed his hopes that when the annual convention of the National Association of Direct Mail Advertisers is held in this city next October that the proposed reduction would be effective and laid before the members for their vote of appreciation. He told of the thousands of mail users who would be affected by the return to the 1923 schedules, then cited the report of the Federal Reserve Bank which showed that within a period of five years of the higher rates there had been a decrease of 15 pr cent in the printing and paper business, while other industries showed gains. After explaining to Congressman Connolly the difference between mail order selling and mail order advertising such as prevailed in the paper and printing trades and advertising field he stated that these mail users paved the way for the sale of commodities. He contended the high rates caused the falling off in the business in these industries and then gave an outline of the population affected by the mail losses, stating that more than 20,000 persons were involved. Drops in mail matter occurring the first year of the rise in rates amounted to 1,600,000,000 post cards and 1,500,000,000 third class, he said.

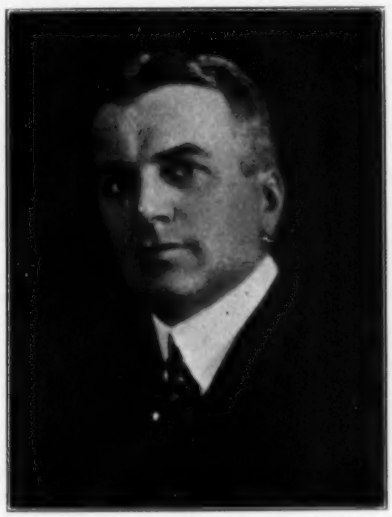
Other industries who were represented at the meeting were the seed distributors, catalogue houses, such as the Sears Roebuck Company, advertising fraternity and large publishing concerns. Those from the Philadelphia Paper Trade Association attending were: R. J. Considine, Paper House of Pennsylvania; Simon Walter, S. Walter, Inc.; Morgan H. Thomas, Garrett Buchanan Company; President David Lindsay, Jr., of the Association, and of the Lindsay Paper Company; W. S. Wilcox, E. Walters, Wilcox, Walters, Furlong Company; James McCracken, Riegel & Co., Inc.; Henry Lloyd, Dill and Collins Company; Richard Hartung, A. Hartung, Inc.; Lindsay Evans, secretary, Philadelphia Paper Trade Association, and of the Lindsay Paper Company; W. W. Seary and C. Bond, D. L. Ward Company; L. F. Supple, Whiting, Patterson Company; Irwin Megargee, Curtis and Brother, Inc.; M. K. Christine, Raymond and McNutt; Joseph Miller, Garrett Buchanan Company, and Howard Satterthwaite, Satterthwaite Cobaugh Company.

Garrett Buchanan Co. Reorganized

Following the annual meeting of the Garrett Buchanan Company, held last Wednesday, announcement is made of the election of Morgan H. Thomas to the presidency of the company and the passing of its control into his hands. According to arrangements made with the heirs of the late John H. Sinex, and former head of the company, the stock holdings of the Sinex Estate have been taken over by Mr. Thomas. With the announcement of the passing of the control of the company to the present head of the concern it was also disclosed that he was elected a director. Others on the board of directors are Edward A. Keller and G. Lloyd

Cowan, Jr., the latter a son-in-law of the late president of the company. At a subsequent meeting of the directorate the following officers were elected: President and treasurer, Morgan H. Thomas; vice president and manager, Edward A. Keller; vice president and assistant manager, George Weaver; vice president, Joseph S. Weaver; vice president, Edward J. Beale; vice president, John S. Heverly; secretary and sales manager, G. Lloyd Cowan, Jr.; auditor and assistant treasurer, Harold Wollaver; credit manager and assistant treasurer, John R. Kohl; assistant sales manager and manager of the cover department, Joseph H. Miller; manager of the bond and ledger department, Fred A. Roll, and manager of the envelope department, Frank H. Seltzer.

The president's idea in acquiring virtually all the stock of the company, it was announced, was primarily to take care of the interests of the officers, who have been connected with the company for a number of years. Although the officers are stockholders in a small way, Mr. Thomas has formulated a plan whereby they will acquire larger holdings of the common stock of the company. The newly elected president has been associated with the concern for more than 28 years, starting as a bill clerk. On the day following the reorganization, President Thomas left for Battle Creek, Mich., accompanied by Mrs. Thomas. He will remain in the West several days.



MORGAN H. THOMAS

Paper Trade Association To Elect Officers

Members of the Philadelphia Paper Trade Association will meet in annual session on Friday, January 20, at the Chamber of Commerce. There will be the annual report on activities followed by election of officers. E. T. Walter is chairman of the nominating committee.

Trade Attends Funeral of Mrs. W. J. McGarity

Trade associates attended the funeral services held for Mrs. William J. McGarity, wife of William J. McGarity, Sr., head of the Penn Paper and Stock Company, held last Friday at St. Francis de Sales Church. Mrs. McGarity died last Tuesday morning from an affection of the heart at her home, 4644 Spruce street. Surviving besides her husband, are three children, William J. McGarity, Jr., associated with his father in the business, and two minors, Cornelius and Cecilia.

R. Peel Bentley Opens Office

R. Peel Bentley, for several years associated with the Atlantic Paper Company and within the past two months with the D. L. Ward Company, has opened offices in the Public Ledger Building for the purpose of conducting a general paper brokerage business. He was one of the three members of the D. L. Ward Company who last week started in business on their own account and then decided to discontinue the partnership, leaving the office entirely in the hands of the present occupant and returning to their old positions with the Ward Company.

Resnick Paper Co. To Reorganize

Following a settlement of the financial affairs of the Resnick Paper Company, under receivership proceedings, the company will shortly re-open business at its old location. The assets of the company were disposed of under the receivership last week, when the stock of coarse papers, bags and specialties were sold.

Chemical Paper Co. Makes Attractive New Line

The Chemical Paper Company, of Holyoke, Mass., has sent to the Philadelphia trade an attractive pamphlet of its new Interwoven Text. It is a high grade deckle edge book paper line which compiles into an attractive pamphlet form for announcements, ad matter or other printing purposes.

Patterson Parchment Issues Historical Documents

Among the new year specialties received from the paper manufacturing branch of the industry, are two facsimiles of important historical documents printed upon Patterson parchment paper. They are reproductions of the famous Gettysburg Speech of Abraham Lincoln and the Declaration of Independence. The adaptability of Patterson parchment to any purpose is disclosed in new year novelties and shows that these grades of paper are not only applicable to the food trades as wrappers but can also be used for printing purposes or writing papers where a durable product is needed and where effectiveness in design is brought out.

Reynolds & Reynolds Co. Expand

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, January 17, 1928.—The Reynolds & Reynolds Company, manufacturers of tablets, ledgers and stationery, has purchased the plant of the Mid-West Color Offset Company in Dayton and will expand in its printed, lithographed, manifold and stationery lines.

The executives and craftsmen of the Mid-West also will join the Reynolds & Reynolds staff, thereby adding to the efficiency of the organization in the handling of a trade which has become national in extent. The present lithographing plant of the Reynolds & Reynolds Company has been merged with the acquired concern and the facilities for catalogues, folders, advertising display matter, sales literature, letter heads, window display pieces and other items used in direct mail or sales work have been materially broadened.

The sales force will be increased and every section of the country will be covered, it is stated.

Expansion plans of the company call for the construction of a new building as an addition to the plant at Washington and Dudley street.

The Reynolds & Reynolds Company was organized in 1866, incorporated in 1888 and reorganized in 1920. Though the concern has just concluded the best year of its existence, it is striving to double sales and production in 1928, it is announced.

The plant and equipment of the Mid-West Company, located on Jefferson street, was removed to the Edgemont factory in record-breaking time. Additions to the engraving department equipment have been ordered, making it one of the most complete in the country.

To Test News Print for Oil and Ink

WASHINGTON, D. C., January 18, 1928.—E. O. Reed, chief of the paper testing laboratory of the Government Printing Office contemplates conducting tests of the physical properties of news print paper, among which will be the absorptive properties of news print in relation to oil and ink.

The tests are being made in connection with that laboratory work which is done as technical work for the American Newspaper Publishers Association. W. E. Wines, manager of the mechanical department of the association, is sending a notice to members asking them to submit samples to Reed.

Paper Business Steadily Improving in Chicago

Livelier Request Experienced for Different Grades of Paper and Outlook for 1928 Considered Quite Promising—Harmony and Co-operation the Keynote for Local Merchants for the Current Year—Splendid Effect of Net Profit Control System

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 16, 1928.—Inventories are, for the most part, over and Chicago paper houses are rapidly swinging into stride for the 1928 season. Business in all lines is said to be better than it was for the first ten days of this month. No great activity in stock orders is being reported by salesmen but specialties are sharp enough to demonstrate that the paper market is very much alive and charged with activity that speaks well for the coming year. All grades of paper are picking up and those that were strong before the inventories and the holidays are resuming their normal wholesome condition. From reports verbally made by heads of a number of Chicago concerns, the inventory taken at the close of business for 1927 showed just about what was expected, little profit but a distinct note of progress and a great deal learned that should be of benefit this year.

There is also a tendency for paper men here to agree that the year 1928 must be one of harmony and co-operation in all similar lines and between different lines of paper. The actions of the National Paper Trade Association in their studies of Net Profit Control and close interests in the costs of doing business have had a splendid effect in that the merchants are following the lead of their association to a great extent. There is a belief that paper men should analyze the cost of business and over head and that during 1928 they should devote as much of their time as they can to sales production. It is true that here in Chicago paper men seem to realize and appreciate their mutual problems.

This improving of merchandising operations is bound to bring about conditions that will make for a fairer profit and better tone from the market standpoint. Each year sees a gradual decrease of that class of paper dealers unwilling to co-operate for the betterment of the entire market.

Chicago paper houses dealing in that grade, report that the mills are all short of coated book paper at this time and that they are in need of coated tonnage. The sulphite bond market is improving a bit and prices in this grade are reported a little stronger than formerly.

Many Chicago Paper Men to Attend Convention

All eyes, figuratively speaking, are turned on New York as the dates of the next meeting of the National Paper Trade Association at the Waldorf-Astoria draw nearer. Jim Coy, president of the Salesmen's Association of the Paper Industry, reports that that organization will be strongly represented at both the big banquet on February 20 and the business meeting of the Salesmen's Association on February 23. A large number of men in the paper business here are also planning to go to New York next month. The recent activities of the National Paper Trade Association and the efforts being made to really improve existing business conditions are being met with genuine favor by local merchants. As a result the developments at the Fall Meeting in Chicago will add interest to the New York program.

Unique Atlantic Bond Broadside

The Eastern Manufacturing Company, New York, represented in Chicago by the LaSalle Paper Company and in Springfield, Ill., by the Central Illinois Paper Company, has recently sent out to advertisers and printers a very attractive broadside in the form of a series of folders to help in the way of supplying suggestions and examples pertaining to the various types of work for which bond paper is suitable.

Twelve folders are suggested covering illustrated sales letters, catalogs and price lists, color work, business forms, testimonial letters, use of maps, novelty letters and other interesting lines. The title of the broadside is "Please Help Us to Help You." The printer and advertiser is offered a splended opportunity to find out just how Atlantic Bond lends itself to specialized uses.

Joseph Joyce to Take Part in Good Will Tour

Joseph Joyce, Sr., president of the Empire Paper Company, Chicago, leaves January 28 on the Illinois Chamber of Commerce good-will tour of the Caribbean Sea. The popular head of the Empire Company will be one of a party of seventy-eight Illinoisans who will make up an entire boat, the United Fruit Company's *Cartago*.

Mr. Joyce will have an excellent opportunity to study market and foreign trade conditions in the Latin-American countries. The actions of Colonel Lindbergh and now of President Coolidge in making a determined effort to hold the good will of the Caribbean countries and to keep open the possibilities of retaining the ever increasing opportunities for foreign trade is also the purpose of the Illinois Chamber of Commerce delegation.

Mr. Joyce will be gone over three weeks during which time the seventy-eight travelers will visit a number of well known Caribbean ports. At each of these cities representatives of the various countries will meet with the party to discuss trade relations and to further connections with the United States. Havana, Jamaica, Kingston, Porto Colombia, Baranquilla, South America, Castilla and the Panama Canal Zone are among the regions to be visited. Thirteen per cent of all the exports of the United States are taken up by nations touching on the Caribbean Sea.

Waterway to the Gulf

The last links in the Illinois waterway to the Gulf have now been forged and it is only a matter of time until Chicago industry has a direct waterway to the Gulf with all the betterments it will bring. Governor Len Small of Illinois recently stated that the work will be pushed with all possible vigor. In cutting through Illinois a series of five locks and four dams covering a distance of sixty-three miles must be constructed, each lock 110 feet wide and 600 feet long.

News of the Trade

D. W. Dietrich, who recently opened a paper firm under his own name in the Builders Building, is rapidly getting his sales department under way. Mr. Dietrich is handling a representative line of paper and will welcome a call from any of his friends and associates in the paper industry.

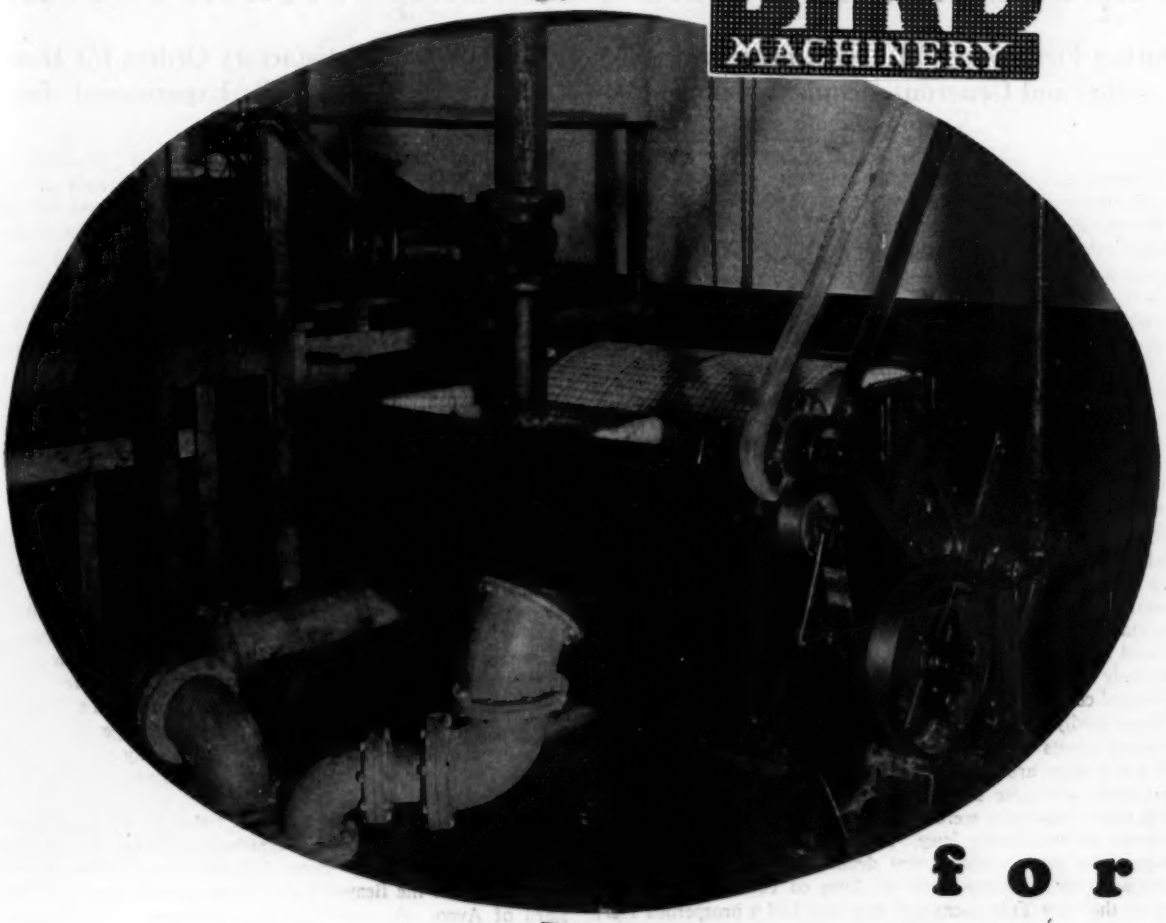
Dwight Brothers Paper Company has recently added the Argonaut Cover line to its well rounded stock. The Argonaut Cover line is made by the Holyoke Card and Paper Company. It is carried in medium weight and in nine shades, from neutral to bright colors. The new cover has a three toned surface which gives it an unusual and striking cover effect.

T. J. Backus, formerly connected with the mill department of the Butler Paper Company, has accepted a position with the Champion Coated Paper Company, Hamilton, Ohio. Mr. Backus will be an assistant to Mr. Suter at the Champion Mills.

Visits American Writing Representatives

HOLYOKE, Mass., January 16, 1928.—President Sidney L. Willson of the American Writing Paper Company left Tuesday last week on a business trip which will take him through the Middle West where he will spend the next 10 days in conferences with representatives of the Company in Detroit and Chicago. He will then return to New York City for conferences with his representatives there.

BIRD MACHINERY



for high efficiency at low cost per pound of fibre recovered

BIRD MACHINE COMPANY
South Walpole
Massachusetts

1593

The BIRD SAVE-ALL

Paper Demand Better Than Expected in Toronto

During First Weeks of Year Business Has Been Excellent With Satisfactory Orders for Distributors and Generous Requisitions to the Mills—Distinctly Good Call Experienced for Various Grades of Fine Paper—Wrapping Paper Mills Busy

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 16, 1928.—With the New Year launched to the extent of half of the first month, the Ontario paper trade is beginning to form impressions as to the probable state of the market during 1928. Contrasting the fairly peppy way business has opened up both in the wholesale and manufacturing departments with the draggy conditions that existed in January and February of last year, those in the industry are distinctly heartened. Where business was expected to at least mark time during the first half of January there have been satisfactory orders for the jobbers and generous requisitions to the mills. While no great volume of trade is passing in the wholesale paper arena, practically all of the jobbers say the business they are getting surpasses in bulk what they were looking for at this time.

There is a distinctly good call for fine papers and it would seem as if direct mail and other advertising campaigns had been planned early by many firms, for there is good enquiry for book, litho and catalogue papers, while the coarse paper market is also keeping up very well. Of course there is and apparently always will be considerable competition in the light weight paper field, but despite importations of foreign crepes, straight tissues and toilets, the demand for Canadian made goods of these classes has opened up extremely well, and both manufacturers and jobbers are confident of a good coming twelve months' business.

It can hardly be said that the coarse paper market has recovered from the effects of the Christmas rush and jobbers in wrapping and paper bags are rather quiet as yet, although the wrapping paper mills are quite busy. Manufacturers of coated stock are much busier than they were a year ago now and envelope manufacturers are moderately busy. Probably the most active department of the paper trade is that devoted to paper box making. Manufacturers of cartons and all lines of containers are very busy as the New Year opens and they also had a prosperous 1927. The paper box plants have been liberal users of board for some months past and board mills throughout the province and the Dominion as a whole are decidedly active.

As in strictly paper lines, prices on board of all classes have continued firm and there are no prospects of any recessions in the near future. This means considerable to the paper box maker who usually has to make a downward revision of his product when the board market goes down. Within the next few months the output of two big new board mills being erected in Toronto will be on the market and there is some speculation as to what effect this is going to have on the board situation. Both the Canada Paperboard Company and The Dominion Envelope and Carton Company are erecting large factories on the Toronto waterfront and while they are big users of the product themselves it is likely they will have consideraable surplus of board to dispose of.

The only weak spot in the Canadian pulp and paper industry is pulp. As a result of surplus stocks and falling demand most of the manufacturing firms have curtailed production materially and some of them have ceased producing entirely until the market strengthens. Ground wood pulp is selling generally at $30 but some lots have been bought as low as $25. Bleached sulphite is selling at from $76 to $78 and unbleached around $60.

Spanish River Plans Extension

Commenting on the result of the Great Lakes Power vote at Sault Ste. Marie, Ont., when the Dominion Hydro lost out to private power producers on a question of who should supply power to the municipality, Colonel C. H. L. Jones, vice-president of the Spanish River Pulp and Paper Mills, Ltd., said: "The answer as far as the paper company is concerned can be only one thing. We are satisfied with the power we are getting. We don't know where we could get it cheaper. We have a certainty as far as price is concerned and we know that we can extend our plants to 300 tons a day, because our bankers will lend us the money to extend our plants to that capacity if we have assured power—power being vital to our business—but we do know that we cannot put up a proposition to bankers to extend our business if we have to admit to them the uncertainty as to cost of power which would inevitably arise if Hydro are going to develop in the Soo rapids." Colonel Jones added that there was every prospect now of considerable expansion of the company's plants now that the power matter is settled. Spanish River operates a mill at Sault Ste. Marie with a capacity of 250 tons of news print per day, together with plants at Espanola and Sturgeon Falls, Ont.

Notes and Jottings of the Industry

The Interlake Tissue Mills, Ltd., head office Toronto, has brought out a very attractive booklet, with a three-color cover, entitled "Cuts and Crimps of Crepe Paper." The booklet gives illustrations of different types of window dressing display decoration, together with illustrations of different kinds of cuts and crimps as applied to the use of crepe paper for window-dressing It is a very compact and useful book of instructions for effective and artistic window-dressing. The instructions are in as condensed a form as is feasible and are written in language that is easily understood. The booklet is intended principally for distribution among merchants who wish competent instruction in the art of window-dressing.

The January issue of "The Crest," the very attractive house organ put out by the Howard Smith Paper Mills, Ltd., has been mailed to paper jobbing houses and the printing trade, the cover being in one of the Beaver line of stock and the inside printed on Bard of Avon. As usual the book contains a lot of carefully written letter press containing pointers for both the buyer and seller of paper. Incorporated with "The Crest" is "Type Talks," a little trade sheet for printers, lithographers and their salesmen.

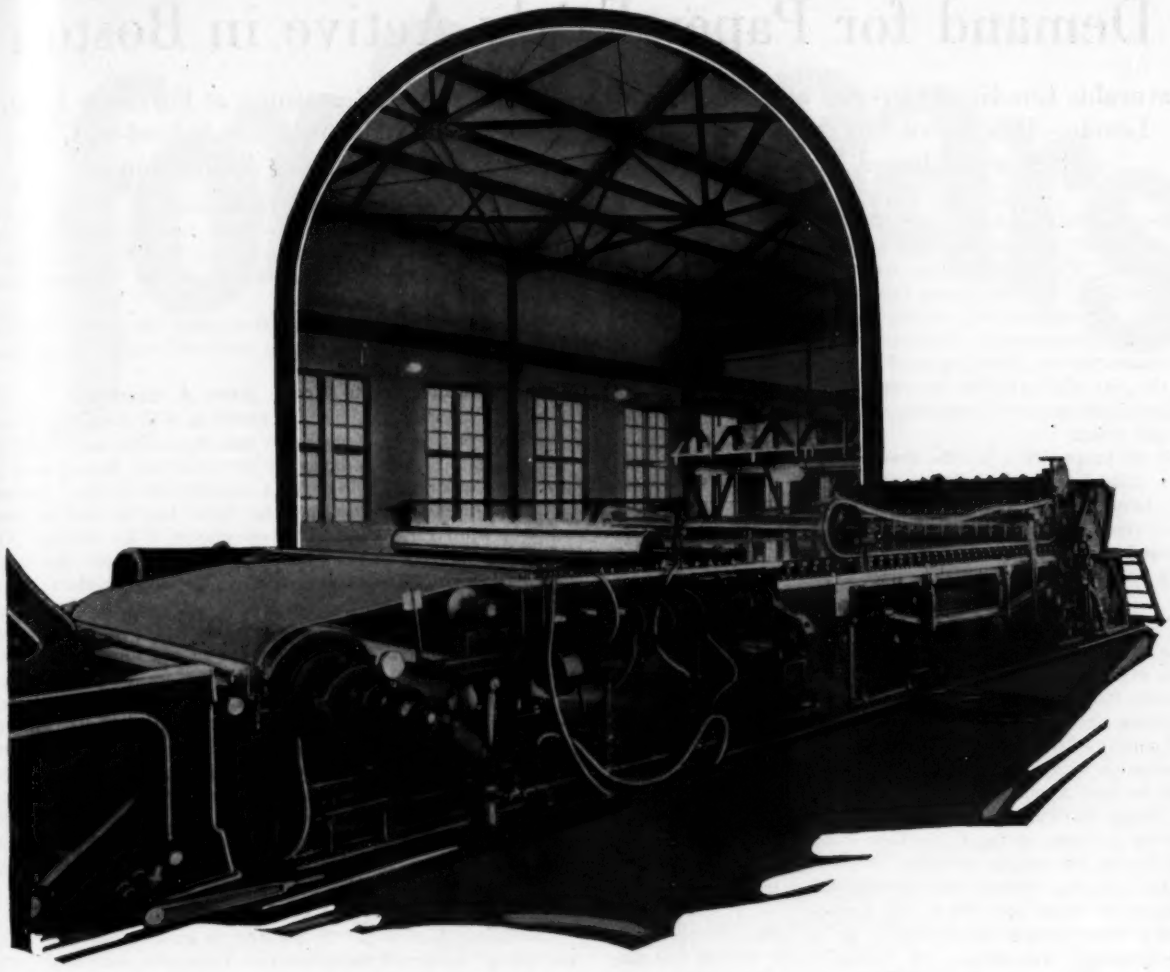
George R. Gray, vice-president of the Spanish River Pulp and Paper Mills, Ltd., Sault Ste. Marie, Ont., joined J. G. Gibson, secretary of the concern, in Toronto this week and proceeded to New York City for a meeting of the directors of the company.

E. W. Wilkinson Co., Ltd., Toronto, Canadian representatives for Paper Service, Ltd., Philadelphia, manufacturers of a wide range of box cover papers, report an increasing interest in, and demand for, the Paper Service line of box coverings in the Canadian market. Sales were good last year and the firm are looking forward to increased turnover during the present year, the paper box business in Canada having opened up well.

Ritchie & Ramsay, Ltd., manufacturers of coated paper at New Toronto, have moved their executive and sales offices to the fifth floor of the new Atlas Building on Bay street, Toronto.

At the annual meeting of the Canadian Pulp and Paper Association to be held in Montreal during the week of January 23, it is likely that Col. C. H. L. Jones, of the Spanish River Pulp and Paper Mills, Limited, will be elected president for 1928. Nelson E. Gain, of the Interlake Tissue Mills, Limited, Thorold, Ont., was in the city this week arranging for the meeting of the Technical Section which takes place in Montreal during the same week as the general convention of the industry.

John B. Piper, sales manager at Toronto for the Provincial Paper Mills, Limited, and N. E. Mainwright, in charge of export, have returned from a visit to the company's mill at Port Arthur, Ont.



Breakdowns Cut your Profits

Breakdowns usually occur at the most inopportune time—when the machine is being forced to the limit to meet a difficult production schedule.

In a paper machine, the vital factors for assurance of 24-hour-a-day reliability over the longest period of time are experienced design, careful selection of materials and precision workmanship.

The illustration shows the suction boxes and the Kilberry Suction Couch Roll on one of our latest machines, a Keystone Removable, Adjustable, Shakable Fourdrinier.

Downingtown Machines (Fourdrinier & Cylinder) incorporate progressive design for economical production and a strict observance of the factors that are essential for reliability.

Our Products Meet Our Promises

D

KEYSTONE Fourdrinier

Downingtown Mfg Co. Downingtown Pa.

Demand for Paper Fairly Active in Boston

Favorable Conditions Prevail at Beginning of Year With Prices Remaining at Formerly Quoted Levels—Box Board Merchants Experiencing Good Normal Business for Season—M. O. Byrne Elected President of New England Paper Merchants Association

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 16, 1928.—Steadiness prevails in the paper market here, with a fair amount of business being consummated. The paper industry is regarded as nearer normal than some others. The year began favorably and indications are that activity will continue with orders in at least the same volume, if not more. Prices remain at practically the same levels. Box board merchants say that there is a good normal business for this season of the year with a healthy increase in volume. One of the comments on the box board trade here is that "business does not jump up and down."

In old papers there is little change since the report of a week ago: Mixed papers are slightly weaker than they were, a condition brought about by an over-supply, due to the abundance of stock from wrappings on Christmas packages, and a diminished demand. In bagging, new and old domestic rags, and foreign rags, conditions are about the same.

New England Paper Merchants Elect Officers

The most enthusiastic meeting of the New England Paper Merchants Association for a long time was held at the Harvard Club of Boston, Thursday evening, January 12, when the annual election took place. The Association is in the most flourishing condition since 1904, when it was founded by the late William F. McQuillen, its first president. There are 43 member firms in the Association with 10 added during the year. They represent every state in New England except New Hampshire. A new member the Frank E. Vincent Company, of Lynn, Mass., was elected. Charles A. Esty, of the C. A. Esty Paper Company, Worcester and Boston, the retiring president, presided.

The following officers were elected: President, M. O. Byrne, Whitney Brothers, Inc.; First Vice-President, A. E. Ham, A. E. Ham & Son; Second Vice-President, R. M. Stone, Stone & Forsyth Company; Treasurer, C. A. Young, Carter Rice & Company Corporation; Secretary, F. H. Blackman, D. F. Munroe Company, all of Boston; Auditor, A. H. Arnold, Providence Paper Company, Providence, R. I. Executive Committee, George D. Allen, Knight Allen & Clark, Inc.; Bryant McQuillen, Storrs & Bement Company; Leon Young, J. S. Cheever Company, all of Boston; Walter Butler, Perkins & Butler, Inc., Worcester, Mass. Representatives to the National Paper Trade Association, W. B. Stevenson, Storrs & Bement Company, and A. W. Blackman, D. F. Munroe Company, both of Boston.

May Meeting to Be Held in Providence

It was decided to hold the May meeting in Providence, probably on the 9th and 10th. According to custom, the business meeting will be held on the evening of the first day. The next day will be devoted to golf and social gatherings at one of the country clubs of Providence.

President Esty introduced the speakers of the evening, all of whom are members of the association. A. W. Blackman and W. B. Stevenson, as representatives to the National Paper Trade Association, spoke of the change in the secretaryship of the National Association, praising highly the new secretary, Frank Floyd, who is to take office in February.

John C. Kennedy, secretary of the Carter Rice & Company Corporation, gave a very able talk on "The Credit Situation in New England Today." William H. Rourke, president and treasurer of the Rourke Eno Paper Company, Hartford, Conn., told "How the New England Paper Merchants Association Helps the Out of Town Merchant." W. E. Porter, Jr., of Cook-Vivian Company, Inc., Boston, spoke on "How the Association Can Help the Paper Merchants to Help Themselves." J. R. Whitney, of Meek & Whitney, Inc., Springfield, Mass., who was the delegate of the association to the convention of the New England Council, held in Springfield in November, spoke on "Forward New England."

The new president, M. O. Byrne, gave the closing address, relating his plans for the coming year, and urging the members to give him their cooperation.

Employers to Honor James A. Saunders

James A. Saunders, shipper for Spaulding & Tewksbury will have completed fifty years of unbroken service on February 4 and his employers are to give a dinner in his honor at a Boston hotel on that date, when they will make a presentation to him. He will also be assured that when the time comes that he feels he must retire he will receive a pension in recognition of his services. The firm of Spaulding & Tewksbury is the oldest paper box board dealer in Boston, established in 1865 by Spaulding Brothers. James G. Tewksbury entered the concern in 1870 and the name was changed to Spaulding & Tewksbury that year. Mr. Tewksbury died in 1914. In 1920 the firm was incorporated in Massachusetts as Spaulding & Tewksbury Company. "Jim" entered their employ in 1878, three years before E. M. Davenport, the present treasurer, became connected wth the concern. At that time "Jim" delivered papers to local customers in a wheelbarrow truck. He is pretty well known to members of the trade in general and has many friends among them. He has been a most faithful and efficient shipper and is familiarly known at the freight yards in this city and among the trucking firms, as well as many of the competitors of his employers. During this time he has raised a large family, all of whom are doing well.

News of the Trade

The Carter Rice & Co. Corporation is sending out a series of six "tie-up" folders to the printers in cooperation with large paper manufacturers this firm represents, who advertise their products nationally. The folders contain miniature reproductions of advertisements of the American Writing Paper Company, Hammermill Paper Company, and Strathmore Paper Company appearing in the *Saturday Evening Post*. The outside of the folders contains a picture of the Carter Rice office building on Devonshire street. The printing and arrangement of the "cover" is like that of the cover of the *Saturday Evening Post*. The company is pleased with the number of responses which have been received. The same firm is also issuing a series of six folders tieing up with an unusual and extensive campaign of the Oxford Paper Company to further acquaint the printing trade with its product. The Oxford Paper Company is sending out a large book, 12 by 19 inches, and about half an inch thick, showing the manufacturing process. The illustrations are reproductions of hand paintings by well known artists. The book contains a demonstration of the printing qualities of various grades of both coated and uncoated paper.

With the recent merger of the Thompson & Norris Company of Massachusetts and the Hinde & Dauch Paper Company of Ohio, an organization has been established which connects Boston with a chain of corrugated fiber plants from here to Kansas City, and from Baltimore to Toronto. The factories of the Hinde & Dauch Company include 28 manufacturing units in nine states and two provinces in Canada. This merger places in New England a manufacturing organization of more than national scope. The Thompson & Norris Company is one of the old units in the fiber board industry and a pioneer with the Hinde & Dauch Company

(*Continued on page 30*)

for 37 years

This Trade Mark on Felts has Stamped them for QUALITY and SERVICE

Back of the trademark is a high grade pure wool, manufactured under the most exacting requirements in a plant that checks every operation during manufacture. Quality and service are the two important reasons today for the wide acceptance of Appleton Felts and Jackets by leading paper mills throughout the country. Their experience should be the guide for mills with felt problems.

Your felt requirements can be filled with satisfaction. Let us use our 37 years' experience in solving your felt problems.

APPLETON WOOLEN MILLS

APPLETON, WISCONSIN

Appleton

Felts and Jackets

Fort Howard Paper Mill Improvement Program

Dock and Slip Along Fox River Bank Enables Coal and Pulp to be Shipped Direct to the Mill by Boat—Large Warehouse at Green Bay, Wis., Two Stories High, Just Completed—New Boiler House Construction Progressing—To be Finished About April 1

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 19, 1928.—Completion of a large warehouse marks the second step in the improvement program of the Fort Howard Paper Company, Green Bay, Wis. The structure is two stories high. The lower floor is used for the storage of pulp and raw materials, and the upper one for the finished paper. Stock is already being moved into the new building.

With the completion of a new boiler house about April 1, the third step in the program will be carried out. The building is completed as far as the roof and will be enclosed within the next week. The new smokestack, built of concrete, is 193 feet high. Boiler equipment of the latest type will be housed in this building.

In the first step of the program, the company built a dock and slip along the Fox River bank. This, together with a channel out to the main channel of the river, was finished early last fall. It is now possible to bring coal and pulp right to the mill by boat. Several cargoes were unloaded before the close of navigation this fall.

Consolidated to Pay Flood Damages

Flood damages amounting to $2,645 will have to be paid by the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., according to a jury verdict rendered last week. Suit was brought by John A. and Veronica Benka for crop losses sustained from 1921 to 1926. It was claimed that their land was inundated by the company dam at Biron, Wis., and the farmers therefore were unable to utilize this area for crops.

Forest Conservation Program

Wisconsin's program for forest conservation which has the aggressive support of paper mill owners will be aided greatly by legislation pending in congress. If an appropriation follows the $40,000,000 forest purchase authorization as provided in the McNary-Woodruff bill, officials of the Forest Service will arrange for the purchase of 100,000 acres of timber land in Forest and Oneida counties, of Wisconsin. This land will be added to the reserves already created by the state, and the tree growing lands provided by paper mills and others desiring to raise their own timber. Without such a program, it is estimated that the timber in Wisconsin will last less than fifteen years.

G. W. Mead to Again Run for Mayor

Wisconsin's paper mill mayor is to try his luck politically again this spring. He is George W. Mead, president of the Consolidated Water Power and Paper Company, of Wisconsin Rapids. Mr. Mead accepted the office two years ago when employees of his mill requested him to run. He won the position easily because he was backed by the labor unions as well. Since assuming office, Mr. Mead has revised the city's financial system and has lowered the tax rate. He has no opposition thus far.

H. G. Noyes to Attend Technical Convention

As a means of gaining further contact with the problems of paper and pulp production, H. G. Noyes, director of education along these lines in Wisconsin, will attend the annual convention of the Technical Association of the Pulp and Paper Industry at New York City, February 21 to 23. Each of the vocational schools where he is directing evening classes for paper mill workers will subscribe to a fund to send him to the gathering. Eleven cities now have pulp and paper classes under his guidance.

Mill Superintendent's Unpleasant Experience

W. H. Cannard, superintendent of the Bay West Paper Company, Green Bay, Wis., had his name prominently in the newspapers this last week in connection with an extortion affair. Mr. Cannard received a letter threatening his life unless he deposited a box with $1,000 at a given place. Policemen accompanied him, but the offender was not found. A policeman was mistaken for the criminal and was badly wounded by buckshot.

Second Annual Safety School

Paper mills at Green Bay, Wis., are co-operating in the second annual Safety School conducted among the industries there by the Association of Commerce. Classes will be held weekly until spring, when there will be an annual banquet and graduating exercises. Leading speakers will be secured to address the classes.

Engagement of Miss Wing Announced

Announcement has been made by Mr. and Mrs. Charles W. Wing, of Neenah, Wis., of the engagement of their daughter Eleanor, to Frederick Charles Edwards, Jr., of Manila, P. I. Mr. Wing is president of the Fox River Paper Company, Appleton, Wis., and the Nicolet Paper Company, DePere, Wis.

BOSTON FAIRLY ACTIVE

(*Continued from page 28*)

in corrugated-fiber freight containers. The Boston plant of this company is located in Allston on the Boston & Albany Railroad. It includes a seven-story building with approximately 150,000 square feet of floor space and a productive capacity of more than $1,500,000 worth of corrugated boxes and paper products a year. The two local sales forces will be combined under J. O. Noble, who will be general manager of the New England division. The operating personnel of the Allston plant will be retained without change.

Arthur E. Ham & Sons, paper merchants since 1892, have sent to the trade a unique calendar containing a map of Cape Cod. On the map are drawn pictures symbolic of the early history of the country, Pilgrims, tents of the red men, wild animals, etc. In Cape Cod Bay are vessels, whales, sea serpents. The calendar is accompanied by a greeting, "The Year 1928. Here's Hoping it Will Be a Happy One for You."

"How," the house organ of Tileston & Hollingsworth Company, edited by E. V. Howland, notes in the January issue the third visit of the Barnstormers of the Tileston & Hollingsworth Company, who will accompany James G. Clarke, of the Wool-Clarke Press, to Hartford, Conn., for the annual dinner and analysis of the 1928 calendar to be held January 28 at the Hartford City Club. This number gives a description of Tiho Bond, an ideal letter head in which the stock is of good enough quality to be preserved, cost considered. It is made in white, blue, buff, canary, green, pink and goldenrod.

Charles H. Beckwith, formerly manager of the book paper department of Carter Rice & Company Corporation, has been given supervision of all the offices of that concern on the Pacific Coast. Two years ago, he went to take charge of the Seattle office and since the recent death of Frank Thayer has taken up his new work.

Thomas J. K. Parker, who was formerly with Stone & Andrew, has become treasurer and sales manager of the Kennelly Paper Company.

Charles L. Baird, treasurer of Baird & Bartlett, who has been ill the last two weeks, is reported to be improving and expected to be at his desk soon.

Richard Rising, of the B. D. Rising Company, Housatonic, Mass., called on the trade last week.

Reflecting the Opinion of an Industry!

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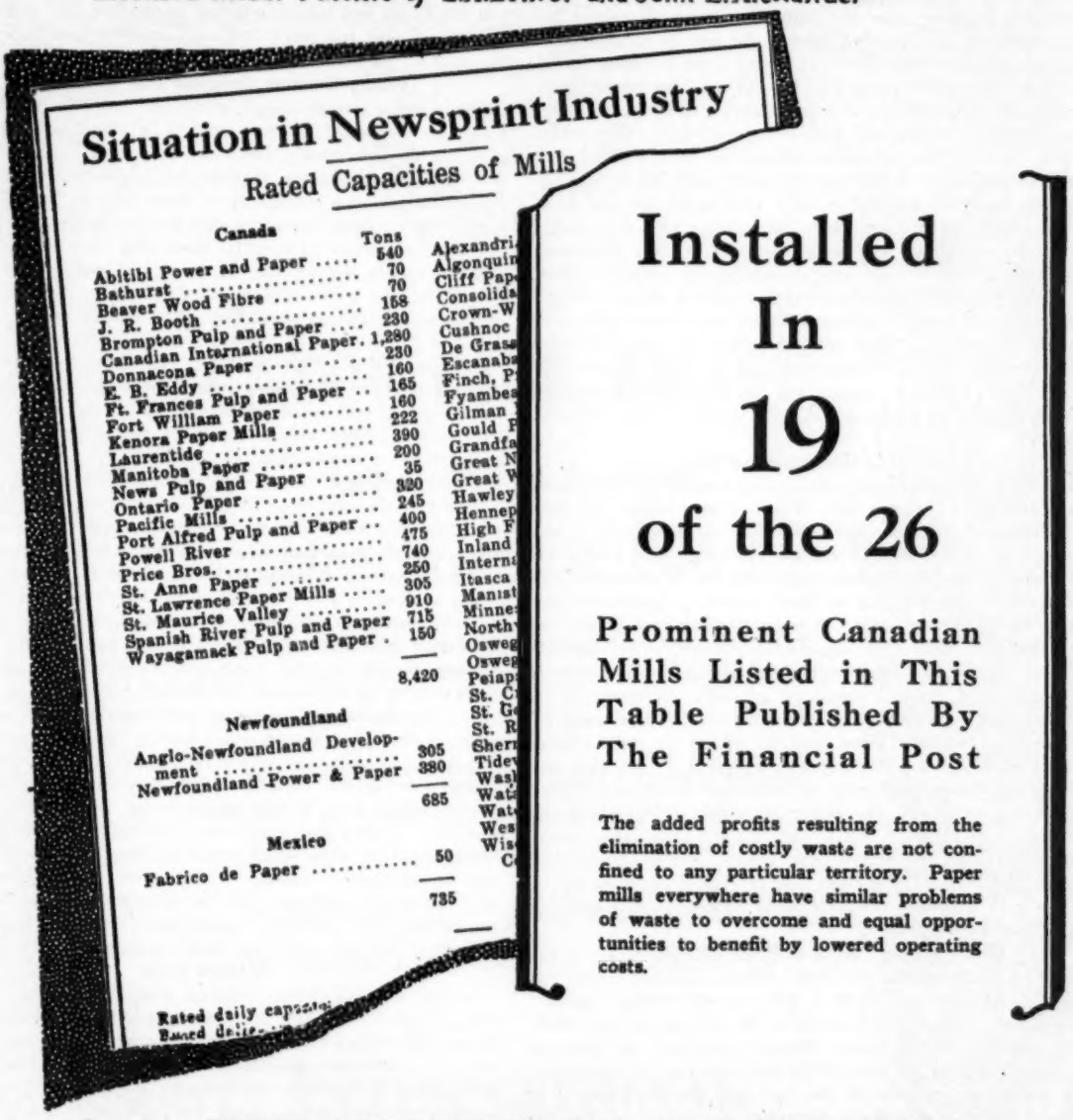

Situation in Newsprint Industry

Rated Capacities of Mills

Canada	Tons
Abitibi Power and Paper	540
Bathurst	70
Beaver Wood Fibre	70
J. R. Booth	158
Brompton Pulp and Paper	230
Canadian International Paper	1,280
Donnacona Paper	230
E. B. Eddy	160
Ft. Frances Pulp and Paper	165
Fort William Paper	160
Kenora Paper Mills	222
Laurentide	390
Manitoba Paper	200
News Pulp and Paper	35
Ontario Paper	320
Pacific Mills	245
Port Alfred Pulp and Paper	400
Powell River	475
Price Bros.	740
St. Anne Paper	250
St. Lawrence Paper Mills	305
St. Maurice Valley	910
Spanish River Pulp and Paper	715
Wayagamack Pulp and Paper	150
	8,420

Newfoundland	
Anglo-Newfoundland Development	305
Newfoundland Power & Paper	380
	685

Mexico	
Fabrico de Paper	50
	735

Rated daily capacity

Installed In 19 of the 26

Prominent Canadian Mills Listed in This Table Published By The Financial Post

The added profits resulting from the elimination of costly waste are not confined to any particular territory. Paper mills everywhere have similar problems of waste to overcome and equal opportunities to benefit by lowered operating costs.

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Simplified Practice In The Box Board Industry

By George W. Gair [1]

The beginning of every civilization, government and industry is characterized by prodigality and lack of self-control. The elements of life, labor, time and natural resource are in the beginning heedlessly consumed to achieve the end in view because they are available in abundance. It seems to be in the order of things that everything immature has to go through a wild oats stage of extravagance, and no harm is suffered until resources diminish or demand declines or over-production stares us in the face. Then, as some economists have pointed out, profits have got to be earned out of saving, and the process of saving is as hard for industry to learn as it is for the individual —more so, because every component of Industry tries it in a different way, and nothing is accomplished until all the businesses that comprise it are forced into an intelligent, collective effort and something resembling Standardization appears ahead. Simplified practice and standardization are twin conceptions with different characteristics. They are inseparable because of their mutual dependence on each other, but we fly to standardization for cover at the first signal of danger, and due to its broader application it runs ahead of simplified practice, which is more scientific and exact.

Lasts for a Generation or Two

An avid and unsystematic consumption of natural resources lasts for one generation, perhaps two. The first cuts spruce for pulp waist high because it cannot comprehend an exhausted forest, and the next tries to reclaim the stumps. But the Box Board Industry, scarcely more than sixty years old, has a reasonable excuse for not adopting saving methods sooner, as standardization and simplified practice require an understanding that grows out of experience to make their application possible. The cataracts of oil now running to waste will be even more seriously regretted than the denuded forests, which we are only beginning to replant. Standardization and simplified practice are synonomous of economy in its broadest sense, and the effects of their neglect take time, patience and understanding to correct. We have got to forget the dollars and cents in immediate reach and replace an acquisitive spirit by the larger principles from which the businesses of an industry derive long life and progressive profit. Earnings must now be derived from clipped corners, quick, safe, specialized labor and production not exceeding the capacity of the country to consume; certainly not a wastefully abundant and perfectly useless production.

The First and Most Difficult Element

The first and perhaps the most difficult element which the box board industry has to deal with in establishing standard methods touches the first ingredient of the process of paper-making, i.e, paper stock or waste. There is probably no basic industry that looks for the food of its machines and the ingredients of its product in such out of the way and diversified places or gets them through such badly controlled operations as that devoted to box board making. Paper stock collecting is still primitive and insecure and its standardization is a problem in itself. The gathering of waste is accelerated by price. When price fails as an incentive, waste collecting is voluntarily suspended, hereby shrinking the supply to a point where it gets an artificial value. It is not the purpose of this article to indicate the remedy, but obviously a remedy is needed in the interests of the laborer who collects and the mill that uses the waste. Some plan whereby the price of paper stock will be prevented from moving in fits and starts, keeping the market in a turmoil of fluctuation, is needed; one that will afford the waste handler evenly sustained earnings throughout the year. A stabilized cost to the board mill will sooner or later evolve from the thought that the industry is at present giving this subject. But a reliable classification of grades, based on recognized and universally accepted standards, will cut losses and influence saving at the first step tremendously. There has been too much spurious economy and speculation at this end of the Industry.

Where Greatest Progress Has Been Made

The point at which simple standards are most easily applied is at the box board Machine, and it is there that the greatest progress has been made. The width or trim of the board machine sets up and determines ensuing manufacturing standards. A modern carton and corrugated or fibre shipping case plant is a unit of inter-related machinery, that gets to the point of maximum economy only when its material flows in a band from the beater over the stacks, the printing machines, the cutters and creasers, through to the gluers and on to the cars without waste. The picture is a beautiful possibility, often realized and accepted as proof of the capacity of standardized equipment to earn by saving—to convert waste into profit. The box board trim and the working area of the plant's presses refuse to be compromised with and the penalty of whimisical thicknesses and nonsensical sizes is loss. They are the cause of production waste and the aggravation of competition.

A few years ago, the average thickness of carton box boards was .018; it is now close to .022, showing an upward tendency due to the larger use of cartons for heavy articles. It was the custom to run any thickness and a range that sometimes included one-half point between even and odd thicknesses was attempted to satisfy a supposedly shrewd buyer, who cleaved to minimum safety to pull down price and put an impossible task on the mill. And the carton manufacturer, receiving a .017 variant out of an .018 delivery, figured on that basis and traded on the saving of a point, setting up a nuisance for himself and his future competitor. This developed confusion and waste in the board mills, where production is not an exact science, and, consequentially, an inclination to drop odd thicknesses, jumping one point, became strong. Below the thirties, this is feasible, and in the higher caliper boards it is equally practical—but a little harder to accomplish, because the value per point is a temptation to the buyer, and for such small individual gains the broader industrial saving gotten through the adoption of even standards is often foolishly sacrificed. The ideal program would be to hold the caliper from .018 up to even numbers for thickness, but it is realized that .016 will have to be conceded for a time.

A Blind Basis

In practice, box board machine changes, as, for instance, a jump from .020 to .022, carry along some unavoidable .021 odd sheets, and cartons cut therefrom, unfortunately, become the blind basis for subsequent estimate and purchase. There is a futility about these thicknesses that suggests the advisability of recognizing a standard caliper gauge for packages enclosing the identical commodity in the same weight, thereby levelling such contrasts as five pounds of kalsomine packed precariously in a .026 carton and one pound of coffee in a carton of the same thickness, which is extravagant. In the corrugated case and fiber container industry, the art of adapting the shipping case to the contents is carried to exactness. The position of the merchandise and the susceptibility of the case to concussion due to its shape or the development of mid-way weakness because of its construction, also its sustaining strength in stacking, are finely calculated, but in cartons of box board such standards are less heeded or are irregularly applied, although the line is more ancient. The thickness and grade of the box board should be prescribed by the manufacturer according to standards suggested by experience.

And the size should also be prescribed. A pound of coffee is in itself standard, yet it is packed in a variety of unstandardized

[1] Chairman, Standing Committee, Simplified Practice. Recommendation No. 43, Boxboard Thicknesses.

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cartons, varying in size and shape. Taking this single commodity for purpose of illustration from the endless variety similarly inconsistent, it is found that a folding carton for coffee attains its ideal in size from the standpoint of symmetry, illusion of bulk, conformity with mill trim, printing press and cutting and creasing machine area down to the shipping case if made 2 15/16x5 15/16x 5 15/16. There are many hundreds of branded coffees whose identity would not be impaired by unifying the size. The whole range of merchandising comes within the possibility of such simplification with ensuing economy. Waste in material, unutilitized press area and the lost time that variety with its maximum of fuss entails can be saved. And these standards become mandatory upon conditions quite remote from the carton plant, carrying along automatic economy. The shipping case in which these standardized packages of merchandise are packed become standard, the warehouse area they cover is exactly measurable and becomes standard, the bulk is inventoried at a glance and an incalculable convenience follows in the train of simplification and the unification of carton manufacture. Uniformity in the dimensions of food product and other cartons influences the standardization of automatic filling and sealing machines with a consequent saving in their cost and the simplification of their construction.

Box Board Industry Must Be Aroused

The large user of the box board carton can scarcely apprehend the economies that a study of this section lays open. He need be educated, but the box board Industry itself, to educate, must first be aroused from its present apathetic attitude. At the last meeting of the folding box group of the paperboard industries association, the writer offered a resolution to appoint a standization committee, whose purpose it would be to further the ends of simplified practice among folding carton manufacturers, functioning in the manner of the standardization committee serving the corrugated and solid fiber group. Their object will be to register accepted standards and promote new ones, so that the whole Industry will recognize and participate in establishing them with the trade. But this reform is likely to meet opposition where cartons of an established size and material have long been used—instances where the carton's shape is supposed to have a distinct trade mark value; or, what is more significant, where the automatic packing and conveying equipment has been built to serve that particular carton. The changes in the dimensions of the old carton are, however, fractional in most cases, and respect for economy influences the change in the same manner that revisions of design are often compelled by the damaging effects of obsolescence. The industry's great opportunity for standardization is with new cartons and in the new box board products that immediately lend themselves to the methods here proposed.

Originality Not Debarred

The foregoing utilitarian and economic reasons do not debar originality of appearance in the carton. Cartons of the same size can be rendered as dissimilar through the mediums of design and color as two canvases of the same dimensions carrying different schemes of art.

Uniformity of size is no deterrent to the carton's assertiveness or attractiveness. The standard measurements do not restrain the artist from using the widest variety of schemes in color or the greatest assortment of materials for design to give the folding carton in its simple, standardized, physical form character and distinct artistic value.

This is not theory, slow of application or difficult to adopt. Before our product can be standardized, our minds have got to be in unison. The effort has its own compensation, but the industry has been backward in realizing the benefits of standardization or in appraising the losses that can be turned to saving by adopting it.

The Division of Simplified Practice was established by Secretary Hoover in 1921 with the purpose of getting producers, distributors and consumers together to cooperate in the general benefit that resulted from simplifications. This movement started way back in the days when Emerson and others of that school were pushing industrial efficiency and the history of what followed is patent to everybody. Standardization made progress at once in the arts that depended most on manual or unskilled labor and was slower of acceptance in technical industries or in those where special tools, dies and machinery represented an investment that was reluctantly scarificed to profit and loss in the interest of simplifying lines.

Paper Industry Has Not Done Badly

The paper industry has not done badly since the Division of Simplified Practice put the government seal of approval on the plan and gave it national impulse. Three hundred and forty varieties and sizes of bond, book cover, ledger, linen and writing papers were reduced to forty-five, but the box board industry, whose products are equally susceptible to simplification and badly needed, has nothing to show. Two years after the inception of simplified practice under the auspices of the Department of Commerce, General Motors had reduced the number of the parts in its product from thirteen thousand to two thousand one hundred, and the pipe and fittings industry not long after eliminated waste in production and distribution by reducing its varieties from seventeen thousand to six hundred and ten.

The problems of the box board industry, and this includes every group of paper products, are simpler of control in individual plants, as well as in the collective industry. With the closing of business for 1927, the profit and loss statement may or may not show how much that is in red would have been turned into black if an earlier acceptance of the suggestions of the Division of Simplified Practice had been heeded or how much that represents sound profit might have been improved through the elimination of waste in its various forms. This is an appeal to the box board industry and its various finishing groups to cooperate in this plan for industrial improvement through 1928. This should be facilitated by process of discussions at association meetings and the collective determination to adopt and hold to the plans, methods and policies agreed upon.

Papermakers Discuss Wage Conference

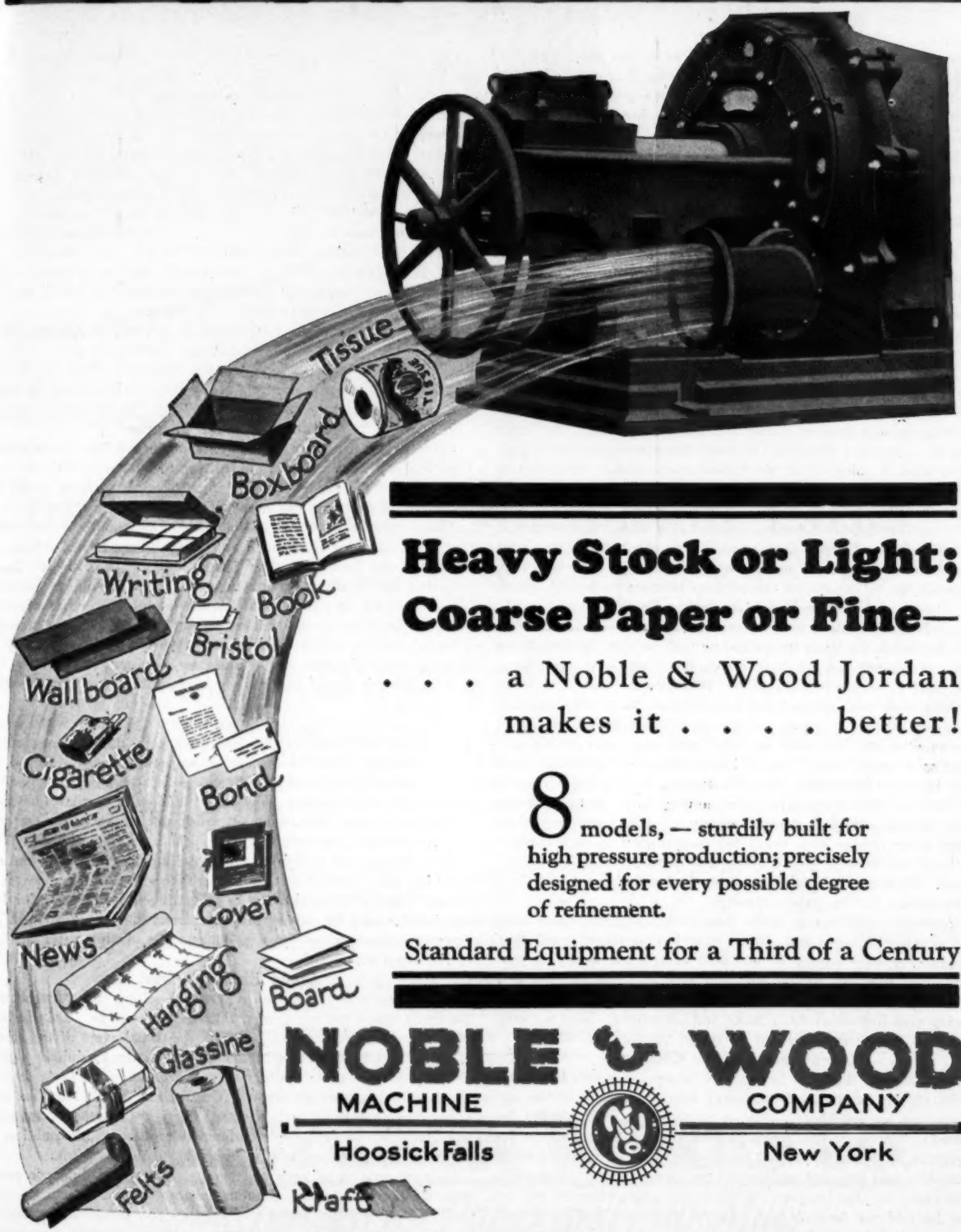
[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 16, 1928.—The annual meeting of the executive board of the International Brotherhood of Papermakers convened in this city during the past week and a number of important matters came up for discussion. A wage conference to be held in March between the paper manufacturers and paper mill unions was one of the propositions considered and there is every indication that such a conference will be held. John P. Burke, president of the Pulp, Sulphite & Paper Mill Workers' Union, took part in the discussion. Wage conferences have been held each year since 1920 with two exceptions.

It was finally decided to leave the matter up to the local unions and notices have been posted asking the locals for an expression of opinion and also if they will be represented if such a conference is held. The executive board has fixed the first Tuesday in March as a date for the conference if the members decide favorably.

It is understood that if the wage conference materializes the unions will again demand increases in various classifications. Existing agreements between the unions and the manufacturers compel either side to notify the other four weeks in advance of the date of expiration of working agreements of any contemplated change in such agreements. The majority of wage and working agreements expire on or about May 1 although manufacturers in some instances have taken advantage of the continuation clause and the agreements run into the second year.

The educational program was discussed very briefly by the executive board and then put over for the time being.



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Facts on Paper Exporting

By Bernard Sharp [1]

On account of the various changes in the export paper business in the past few years, I have been receiving many inquiries of late from my various friends who are particularly interested in the present situation, and have decided to incorporate my views in another article for the PAPER TRADE JOURNAL.

The many change that have taken place in the past ten or fifteen years in the export business—are not only surprising but almost unbelievable. This not only applies to the buyers in the foreign countries but to the sellers and exporters as well.

The Present Day Customer

To give you a better view of the export business today and a clear picture of the changes leading up to present conditions, I must begin with the customer, particularly the customer in Central America, nearby South American countries and the West Indies with which territories I am most familiar. The customers in those countries have made such changes in their methods that one never encounters their old business customs. These changes have not only affected their business but their manner of living as well. The merchant in general has become broadminded and his views on business and general living are more up-to-date. He looks upon education as a necessity; he reads the newspapers every day; learns what is going on in the outside world and is interested in learning of the customs of other lands and adopts them if they are better than his own.

The moving picture has been a great help and inspiration as it shows these people how their neighbors in the rest of the world actually live. They have opened their minds to the idea of travel, to knowledge, to experience and so these changes have come about.

People Have Learned to Read

Only recently I talked to a newspaper man from one of the nearby countries in the West Indies and he told me that the circulation of his newspaper had increased within five years from four thousand daily to twenty-two thousand. When I asked him if this had anything to do with the increase in population his answer was that the population is the same, but the people have learned to read; they have become interested in news; they want news of the surrounding countries; they want to know what is going on and what other countries are doing; they are learning how to dress, how to eat, how to live better. They are building better homes, buying more clothes, eating a greater variety of food, spending their money more freely—as a result the consumption in each country per head is becoming greater daily and more paper is being consumed. Each one of those countries is becoming a bigger and better market for the paper industry.

I remember only ten or twelve years ago, old newspapers were used to wrap packages and if they were buying straw paper, they thought they were buying an excellent quality for wrapping purposes. But now you can go into any shop and find as modern a packing system as in this country. For the most part good paper is being used instead of straw paper and old papers. This not only applies to wrapping paper but to other qualities as well.

Improvements in the Country

In one of the countries I visited, I became acquainted with an official of the Sanitation Department who took pride in the improvements in the country. As we passed by a meat market, he pointed out the up-to-date marble counters, the tile front of the refrigerator, and finally, the fine, clean paper used to wrap the meat. I complimented him, and emphasized the importance of using good, clean paper for that purpose. When I asked him where he got his idea, he told me he had just returned from the United States. That proves they are adopting what they see and will change their old customs to conform with the newer and better.

They are using better stationery; they are using a better class of advertising; their printing and lithography are better and the more educated they become to their own needs, the bigger buyers they are of paper.

Changes in Exporting

The United States has made even more changes in exporting—changes, I am happy to say, for the better. If we continue to progress, the United States will dominate the export business of the world. If our manufacturers will continue to adapt themselves to changing conditions, with their increased and economical production, they should have no difficulty in competing with Europe on most of the items in the paper business as American prices today are not much higher than European prices. For example: on kraft paper, sulphite bond, free of ground wood book paper, standard grades of wrapping and printing paper—the prices of the United States are almost equal to the prices of Europe.

If our export tonnage is increased, it will enable the steamship companies to quote a lower freight rate to meet the low rates on the c.i.f. prices quoted by European countries. The steamship companies are cooperating by reducing their freight rates on commodities on which the tonnage permits.

Other Important Changes

There have been other changes during the past few years which I particularly want to point out. Prior to 1921 and 1922, at least 85 percent of the export business in the Latin-American countries —Central America and nearby South American countries—had been done by exporters or commission merchants in this country. This situation is changed and now at least 60 percent to 75 percent of the business is done by the manufacturer direct. I am referring specifically to the volume of business sold to jobbers. The reason for this change is that the manufacturer has realized he is not building up his business by selling his products through a second hand—a middle man—an exporter or a jobber. By selling through those channels the manufacturer is not establishing his own brand and is not building up a reputation for himself with the clients.

Many exporters exporting paper were not familiar with paper. They simply filled an order for paper any time their representative sent in such an order. Not knowing the peculiarities and technicalities of paper—instead of placing the order for the exact quality ordered by the customer, they substituted with similar qualities. Therefore, a great dissatisfaction arose among the customers and in most instance American exportation methods were blamed. The United States was criticized for those methods. The manufacturer has also realized that by selling direct to a large importer—besides building up a clientele, he is getting a better price for his merchandise and he satisfies his customer. Therefore at least 75 percent of the business today is done by the manufacturer instead of the exporter.

Credit Risk Not Great

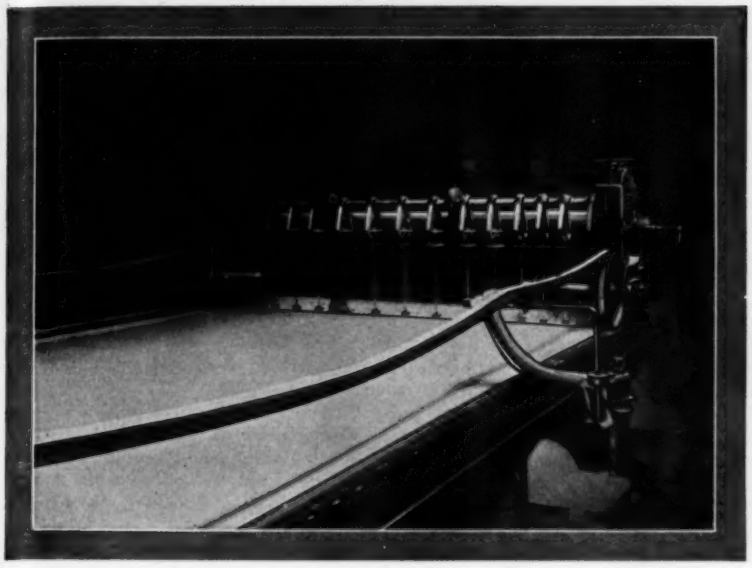
The manufacturer has realized that by selling those merchants, the credit risk is not any greater than in this country. This feeling of security has been made possible by the valuable aid of the banks of this country including branches of many Canadian banks. Credit information is easily obtained from any of those banks, which have branches all through Central and South America and credit files on each of their clients. There are also many agencies who furnish complete credit information. Credit information is freely given to anyone who is interested in obtaining it.

Detailed reports on each and every country regarding consumption, technicalities, native peculiarities, and business methods—are easily available at the Bureau of Foreign and Domestic Commerce in Washington which department receives reports frequently from the various resident consuls.

Would Rather Buy From Manufacturer

The importers in those countries feel that they would rather buy from a manufacturer than from an exporter and prefer to pay

[1] President of the Sharp Paper & Specialty Co., Inc.



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a little more for the same merchandise—because they are reasonably certain they will receive the merchandise ordered and not a substitution. However, an export business cannot be successfully operated unless confidence is established between the customer and the manufacturer. A Latin-American does not place his business with an unknown party—therefore it is necessary that good, responsible representatives in whom the customer has confidence—are employed.

In my opinion, the American manufacturer has now developed to the point where he can hold the export business that Europe has held for centuries. It is my suggestion, if any manufacturer is contemplating an export business, that he first study the requirements of the people in those countries with whom he intends to negotiate; if he cannot afford to have his own representative look after his interests in those countries, he should always be sure that he is entrusting his interests to a man of experience. The export business is difficult unless one is familiar with foreign requirements and can meet the native on his own soil.

Should Study Requirements

The most important thing the American Manufacturer should realize is that he must base his export business on the same sound principles and policies as his domestic business. As soon as he learns that a merchant in a foreign country is as cognizant of his requirements as an American merchant and expects to receive the same attention and service enjoyed by the American merchant—that manufacturer will have no difficulty in making a success of his export enterprise.

Only recently, I was called into a conference, by a large American paper manufacturer who is doing a volume of about half a million dollars annually in the export field. The president asked me several questions. One of them was "Why are we receiving so many compliments on shipments we are making?" Upon questioning their export methods, I learned the following: The export manager had never been out of this country, had never learned from actual experience the requirements of the trade. The salesman who was hired to sell for them had been obtained by correspondence, recommended by some bank or consul; and though he was a good salesman, he was not familiar with the paper business. Furthermore, to force a sale, he would make certain promises to the customer of which the mill knew nothing. The salesman did not think it important enough to inform the mill and when the customer received the paper, he was dissatisfied, and blamed the manufacturer for improper delivery.

Should Have Competent Representative

My advice to this firm was to send a man down to study the requirements of their clients and to fulfill their needs or to employ a representative who could look after their interests in the proper manner. I pointed out to them that in order to do a half a million dollar business in this country they would turn over a volume of that kind to men of ability, instead of employing a representative who does not understand the policy of his house, nor the technicalities of the commodity he is selling. Incompetent representatives will misrepresent instead of represent—will leave a bad impression with the customer regardless of the firm he represents.

On one of my trips, a large firm asked me to adjust a claim for them with one of their customers to whom was shipped 50 tons of paper. The shipment was rejected by the customer and an adjustment was necessary. When I got there, I learned that the customer was a blank book manufacturer. He ordered this paper to make books but the salesman who secured the order overlooked the importance of instructing the mill that the paper must be hard-sized. In fact, the salesman did not know what sizing meant. The manufacturer who accepted the order in good faith, not knowing the requirements, shipped ordinary printing paper. The manufacturer of course, took the stand that the order was completed according to specifications, while the customer insisted he was using only hard-sized paper and if he tried to use printing paper, the ink would penetrate.

In this instance; if the manufacturer had known the requirements of the customer, if the salesman had known enough about paper to specify carefully, all this trouble would have been avoided and the manufacturer would not have had this shipment rejected. Technically, of course, the customer was wrong. But he could not use unsized paper and can we honestly blame him for rejecting the merchandise sent to him under an order that was not intelligently taken.

Granting all these minor shortcomings, the careful observer of the present situation in the paper trade must gratefully admit many changes for the better in exporting methods. What remains to be done is to familiarize ourselves with the specific wants of each foreign market; to take into account the importance of knowing the other fellow's language, which in turn involves a closer personal contact with the customer. Not the least important is the proper handling of correspondence. The Latin-American writes a gracious and courteous letter and would consider the ordinary American business letter cold and unfriendly, even, in a measure, insolent.

We have made great advances in exporting in the last ten years. If the American manufacturers will continue to progress, the customers will realize that we are becoming serious in our exporting. They will cooperate and adapt themselves to the American methods and there will be a better understanding. The future export business will then be brought to the American manufacturer. With our daily increase of production, we must strive for greater export, and only through these approved methods can we obtain an everlastingly sound result.

Leipzig Trade Fair Popular in America

More than 2,000 buyers and exhibitors from all parts of the United States will take part in the Liepzig Spring Fair to be held from March 4 to March 10, 1928. The rapid increase in American participation indicates a notable expansion of its trade in world markets. Fully 10,000 exhibits of the latest industrial products of more than twenty countries will be on view while the Fair will be attended by upwards of a quarter of a million buyers from forty-four countries, breaking all previous records.

The Leipzig Fair has tripled in size and attendance since the War. It offers exhibitors to-day an unprecedented opportunity to reach potential buyers from all parts of the world. The buyers visiting the Fair can study the newest products of all the leading countries in a few hours, saving long and expensive journeys to widely scattered world markets. It is estimated that the American buyers visiting Leipzig in the spring will spend more than $2,000,000 in expenses alone, to take advantage of the bargains offered at the Fair.

The group of 100 special exhibition buildings which house the Leipzig Fair will be increased this year and many new features introduced. The Fair will include 1,200 exhibits of technical machinery.

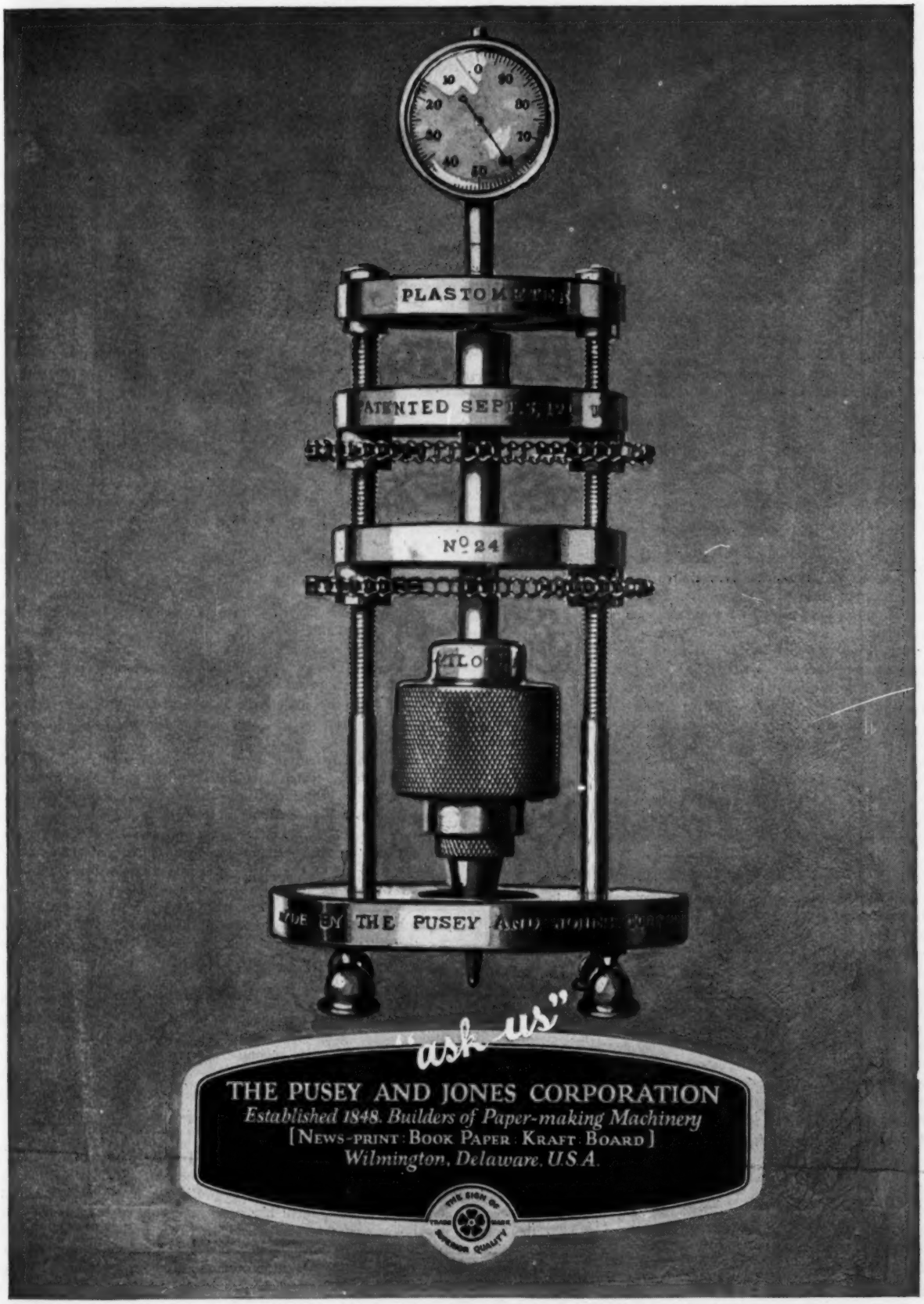
It is significant that while world expositions have recently proved financial failures, the Leipzig Fair is enjoying an unprecedented success. It fills the vital industrial need in bringing together exhibitors and buyers from all parts of the world and thus opening the way to lucrative foreign markets. For information concerning the Fair address The Leipzig Trade Fair, Inc., 630 Fifth Avenue, New York, N. Y.

Increased Freight Rates Protested

HUDSON FALLS, N. Y., January 16, 1928.—The Union Bag and Paper Corporation, of this village, was represented at the hearing in New York last week before the official classification committee on freight rates opposing a proposed increase of ratings on paper bags shipped from the Eastern to Southern territory.

Other bag corporations in Northern New York protesting the increase were Taggart Brothers, of Watertown, the Taggart-Oswego Paper and Bag Corporation, Oswego, Continental Paper and Bag Company, of Greenwich, and a number of other concerns.

It is proposed to increase the rate in carload lots one class higher and in shipments of less than carload quantities two classes higher.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THE PUSEY AND JONES CORPORATION
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The Plastometer—an exclusive Puseyjones product—the accepted standard for measuring the density or hardness of mechanical rubber, such as those for covering press rolls.

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New York Trade Jottings

Ernest S. Lendrum, of Lendrum, Ltd., paper merchants, of 3 Temple avenue, London, England, is in town this week.

* * *

The regular weekly meeting and luncheon of the New York Division of the Salesmen's Association of the Paper Industry, was held at the Canadian Club last Monday and attracted an excellent attendance of members.

* * *

The committee on stock list of the New York Stock Exchange have admitted to trading on the exchange International Paper Company $10,119,300 Additional cumulative 7 per cent preferred stock, consisting of 101,103 shares of the par value of $100 each.

* * *

The United Paperboard Company, Inc., reports a profit of $407,946 after expenses and reserve for Federal taxes for the six months ended November 26. For the corresponding period in 1926 the company reported net earnings of $168,268 after expenses and ordinary taxes, but before depreciation and Federal taxes.

* * *

The Advance Bag and Paper Company, Inc., and subsidiaries, for the eleven months ended November 30, 1927, reports net earnings of $855,000 applicable to fixed charges, depreciation and Federal taxes. This amount represents an increase of $91,175 compared with earnings reported for the corresponding period of 1926.

* * *

Leeds, Tozzer & Co., of 75 West street, New York, machinery engineering and manufacturers representatives, are equipped to design and furnish special purpose machine tools and machinery and to represent manufacturers as sales agents. Edward L. Leeds, president, was recently vice president and director of the Niles, Bement Pond Company; vice president of the Pratt & Whitney Company and formerly assistant general manager and manager in Europe of the Brown Hoisting Machinery Company, of Cleveland. He is a member of the American Society of Mechanical Engineers. Brant A. Tozzer, vice president, was recently New York manager and sales engineer of the Niles Tool Works Company and the Pratt & Whitney Company and formerly sales engineer and European representative of the Lodge & Shipley Machine Tool Company, of Cincinnati. Associated with the company are experienced engineers who have designed and built many special purpose machines and many machines for mass production.

Work of the Import Committee

The Import Committee of the American Paper Industry on January 1 had 2,093 cases pending in the United States Customs Court, or before the Customs Service administrative officials. A compilation made of cases which have been disposed of shows that since the Committee was formed a little over three years ago there have been 1,068 cases decided, of which 841 or over 78 per cent, involved increases of duties, imposition of penalties for improper importation or both. There are 132 cases which have been tried by the Customs Court on which no decision has been rendered as yet. In the last six months 450 cases were added to the previous total of importations of paper about whose duty status there was question. In other words the Import Committee has an average of about three paper importations a day presented for its investigation or action.

Let Contract for Pipe Line

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., January 12, 1928.—The city of Port Townsend, Wash., has let the contract for 60,000 feet of pipe to the Steel Tank and Pipe Company, of Portland, Ore., at a figure of $283.500. This is to be used to pipe water from the Big Quilcene river to the new plant of the Zellerbach Paper Company.

Ask Receiver for Lincoln Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 17, 1928.—A petition has been filed in Superior court at Goshen, Ind., asking that a receiver be appointed for the Lincoln Paper Mills, Elkhart, Md., which, the petition avers, is insolvent. The petition also asks for an order restraining the mills from disposing of or depleting in any way the assets of the company, consisting of manufactured and raw materials, tools and machinery, accounts receivable, etc., pending a hearing to make the order permanent.

The plaintiffs in the petition are Fred G. Dewey and Clarence D. Pratt, officials of a bank at Kalamazoo, Mich.; Cyrus E. Frye, Benjamin W. Combs, Stephen B. Monroe, Luella P. Hawkins, George C. Monroe, Herbert W. Parker, S. Fred Duncan, Charles F. Hunt, Stephen B. Monroe, Alex W. Macrie and Mabel M. Macrie. Defendants named outside the corporation are George O. Comfort, Reeves Comfort and Herman Gumbinsky.

After outlining a reorganization of the mills by which the number of directors was reduced from nine to five illegally, it is charged, and the election of George O. Comfort as general manager of the mills, an illegal act, it is charged, for the reason that the board of directors was illegally chosen, the petition states that Reeves Comfort, a son of George O. Comfort, and Herman Gumbinsky were elected to the board of five directors, and that the three, voting as a unit, controlled the affairs of the mills.

A further paragraph is that on December 15, 1927, the manager closed the mills without consulting the other directors and stockholders, and has kept them closed, greatly to the damage of the mills, the machinery of which, it is stated, is deteriorating in value rapidly by non-use, damage estimated at $10,000 already having been done.

It also is stated that the manager, George O. Comfort, has been disposing of raw materials and other assets of the company, principally to Herman Gumbinsky, a creditor of the mills, and giving him credit for materials sold to him. It also is charged that the materials are being sold at much less than their real value and below their actual cost to the mills.

Bonds and other indebtedness against the mills are secured by mortgages on the mill property and it is averred that the property is being reduced in value until it no longer is adequate security for the debts. Attention is called to penalties on delinquent taxes against the mills, which have not been paid and it is charged that so much of the property as is necessary to pay these delinquencies and penalties will be sold in February if they are not paid before the day of sale. It is charged that the annual office expenses of the mills are too high, the chief item of which is a salary of $7,500 a year to George O. Comfort. It also is charged that Mr. Comfort has announced his intention to continue the sale of assets of the mills notwithstanding protests of other directors and stockholders. Attention is called to the necessity for a day and night watchman for the mills, in order to comply with requirements of the insurance on the property and also a day and night fireman to prevent freezing.

The restraining order permits the employment of the watchmen and firemen and directs that they shall be paid out of funds now in possession of the mills, or hereafter to come into the possession of a receiver, if one is appointed. Attorneys for the plaintiff state that it will be impossible to arrive at the true financial condition of the mills until a receiver has had an opportunity to investigate the assets and liabilities.

New Paper Bag Machine

The Smith & Winchester Manufacturing Company, South Windham, Conn., have recently developed a new paper bag machine for making five wall cement bag tubes, and have already made several installations of this new machine, two recently with the International Paper Company. These machines make the five wall bag tube for the sewed bottom forming the valve end in one operation, all motions being rotary.

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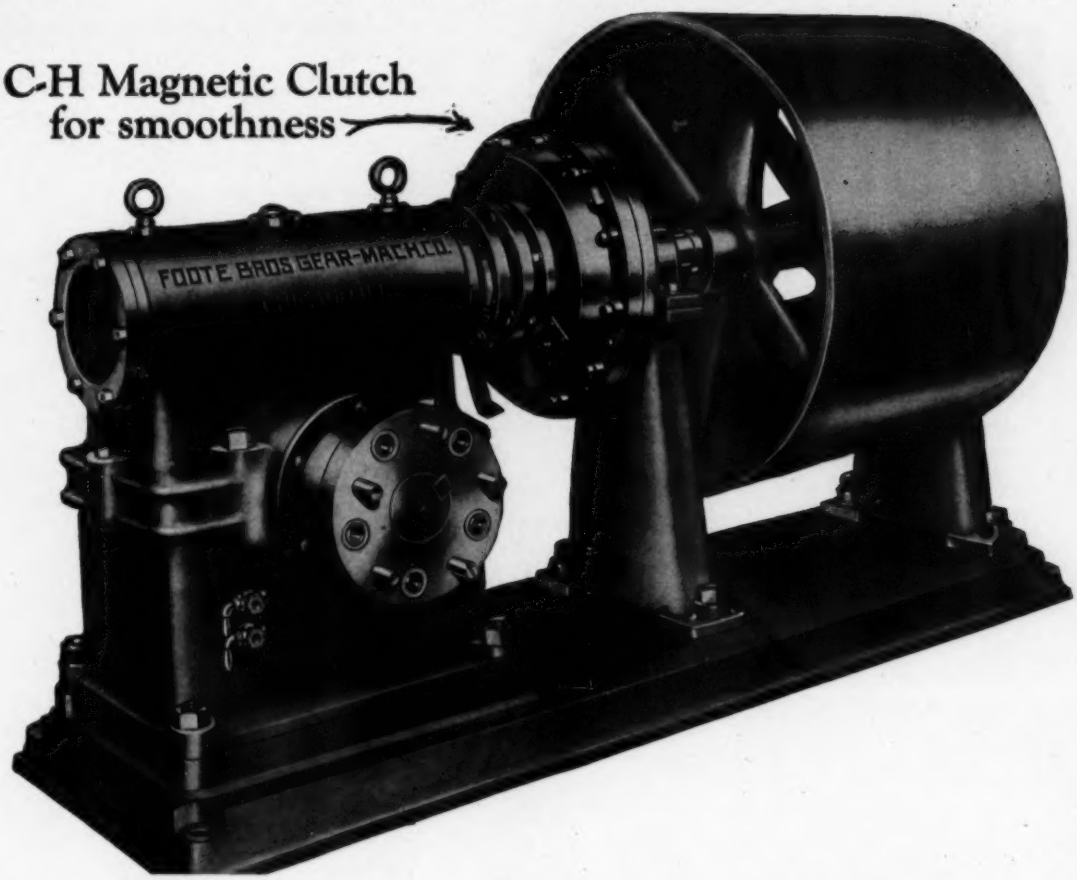

Foote Bros. perfect new paper mill drive with a C-H Clutch

C-H Magnetic Clutches are the simplest made—are the only clutches controlled by a push button, located at any desired distance from machine.

SHOCKLESS acceleration is necessary above all else on paper machine drives. Knowing this, Foote Bros. Gear and Machine Co., of Chicago, build a C-H Magnetic Clutch into their new type H.G. Reduction Gear Unit for Fourdrinier machines.

At the touch of a button, C-H Clutches pick up the load smoothly, without jerk, or jar. The simplest clutches made, their upkeep is negligible. And no special skill or practice is required to operate them perfectly.

C-H Clutches should be installed on all paper mill equipment where smooth drive is essential. C-H Engineers will gladly help you improve your drives. In the meantime, write for your copy of Publication P-11 which gives the complete story.

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PAPER TRADE JOURNAL
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COMING EVENTS

Fifty-first Anniversary of the American Paper and Pulp Association. Convention and Meeting of Affiliated Associations, Waldorf-Astoria Hotel, February 20-23. Annual Meeting, Tuesday, February 21. Annual Banquet, Grand Ball Room, Thursday, February 23.

National Paper Trade Association of the United States. Convention, Waldorf-Astoria Hotel, February 20-22. Theatre Party. Selwyn Theatre, "The Royal Family," followed by Supper-Dance at the Cascade, Biltmore Hotel Tuesday, February 21.

Technical Association of the Pulp and Paper Industry. Convention, Waldorf-Astoria Hotel. February 20-23. Annual Banquet, Hotel Commodore, Wednesday, February 22.

Salesmen's Association of the Paper Industry. Annual Meeting, Waldorf-Astoria Hotel, Thursday, February 23. Annual Banquet, Roof Garden, Monday, February 20.

New York Association of Dealers in Paper Mill Supplies. Annual Banquet, Hotel Astor, Wednesday, February 22.

National Association of Waste Material Dealers, Annual Banquet, Hotel Astor, Wednesday, March 21.

Canadian Pulp and Paper Association. Convention, Ritz-Carlton Hotel, Montreal, January 25-27. Annual Banquet, Friday, January 27.

FOREIGN TRADE IN PAPER

Exports of paper and paper products from the United States during November on the whole maintained the high level of the preceding month, the aggregate value of these shipments having exceeded those of the preceding month by 3 per cent and those of November, 1926, by 10 per cent, according to the Paper Division of the Department of Commerce.

Consignments of news print and wrapping papers continued to improve, and there was also a notable rise, between 45 per cent and 50 per cent, in exports of writing paper and bags. Book papers underwent a further decline, November shipments falling 40 per cent below those of the corresponding month in 1926. Exports of boards and of boxes and cartons, which also rank among the leading items, were about on a level with October.

Among the minor paper exports, shipments of tissue papers and papeteries showed a marked tendency to fall off, while shipments of surface-coated paper, toilet paper, and towels and napkins exceed those of the preceding month and of the corresponding month in 1926.

Total shipments of paper and paper products during November were valued at $2,350,500 as against $2,281,757 in October and $2,115,802 in November, 1926. In addition to paper and board, $441,834 worth of paper base stocks were exported during November.

Imports of paper and paper products into the United States during November registered an increase in value of 9 per cent over the preceding month and 13 per cent over the corresponding month in 1926.

Imports of standard news print, which as usual comprised around nine-tenths of the shipments in this group, was largely responsible for this rise. Imports of other paper and paper products, however, were 6 per cent higher in value than during the preceding month and 15 per cent above November, 1926, due chiefly to increases in receipts of wrapping and tissue papers and pulp boards.

Total paper and board imports during November were valued at $14,202,372, of which $12,669,152 represented 167,675 tons of news print paper and $1,533,220 other paper and board receipts.

Statistics covering receipts of paper base stocks in comparison with October figures show reductions of 28 per cent in the volume of pulpwood receipts and 22 per cent in receipts of waste paper and old rope, while imports of wood pulp and rags are respectively 10 per cent and 22 per cent higher. The total value of paper base stocks during November is given as $9,935,302 as against $9,851,185 in October and $9,685,231 in November of 1926. Shipments of wood pulp amounting to 153,939 tons valued at $8,213,805 comprised the bulk of these receipts. Imports of pulpwood, amounting to 71,529 cords, were valued at $753,216, and other base stocks comprising rags, waste paper, old rope, etc., amounting to 23,811 tons, were valued at $968,281.

SUPPORT FOR FORESTRY BILL

A favorable report on the McNary-Woodruff bill, S. 1181, providing for Federal expenditures of $40,000,000 for the acquisition of forest lands was noted by the Senate Committee on Agriculture and Forestry last week, following brief hearings in which lumbermen, foresters and others urged the early passage of the measure. The Committee also voted to report the bill with an amendment making the total appropriation available for an eight-year program, instead of a ten-year program as originally provided, $1,000,000 of which is to become available immediately upon enactment.

Col. W. B. Greeley, Chief U. S. Forester, explained that the bill contemplated the purchase of 4,000,000 acres at the headwaters of navigable streams, two and one-half million acres in the Lake States and a like amount in the Southern pine region. He estimated the lands in the Lake States and in the South together would cost approximately $15,000,000, while the 4,000,000 acres would costs about $25,000,000.

John W. Blodgett, of Grand Rapids, Michigan, former president of the National Lumber Manufacturers Association, said he felt that reforestation largely was a matter for the Federal Government and the States. In reply to inquiry from Senator Norbeck as to whether he thought the ten-year program was "fast enough," Mr. Blodgett said he did not think it was, but that it was a step in the right direction and "possibly as fast as public sentiment would permit."

Speedier action also was urged by R. S. Kellogg, chairman of the National Forestry Program Committee, and John S. Holmes, of the Southern Forestry Congress. Mr. Kellogg said that while private timber land owners had made remarkable progress in the matter of reforestation, private capital should not be expected, under present circumstances in the various States, to grow trees that require a century to mature. He said that was a matter for public enterprise. Because of the delay in passing this measure, he added, the Nation has lost many years in growth of timber.

Mr. Kellogg stated emphatically that the McNary-Woodruff bill was a necessary step in the perpetuation of our forest resources and until it was enacted by Congress, those interested in its passage would appear and reappear before the Senate Committee. He said the policy embodied in the bill was first advocated in 1900 and that it was time action should be taken.

Others who appeared before the Committee included R. Y. Stewart, of the Society of American Foresters; George D. Pratt, president of the American Forestry Association; L. W. Wallace, secretary of the American Engineering Council, and Shirley Allen, of the American Forestry Association, speaking on behalf of the General Federation of Women's Clubs.

There are many warm supporters of this measure among the members of the paper industry and they should remember that it is urgent to do whatever they can now to help enact the bill into a law.

PAPER MILL EMPLOYMENT

Employment in November decreased in the paper and pulp industry but increased slightly in the paper box industry according to the Bureau of Labor Statistics, Department of Labor.

Reports were received from 214 paper and pulp mills which gave their October employment at 58,826 decreasing in November to 58,713, a decrease of 0.2 per cent. The payrolls in these mills also decreased from $1,562,272 in October to $1,554,529 in November, a decrease of 0.5 per cent.

The Bureau also received reports from 179 paper box factories which gave their October employment at 20,660, increasing in November to 20,836, an increase of 0.8 per cent. The payrolls in these factories on the other hand decreased from $470,599 in October to $470,055 in November, a decrease of 0.1 per cent.

St. Regis Paper Co. To Meet

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 3, 1927—The annual meeting of the stockholders of the St. Regis Paper Company will be held January 11 at Watertown and a number of important matters are scheduled to come up for settlement. The stockholders will will elect directors for the ensuing year and also will pass upon a number of amendments to the by-laws of the company.

A ratification vote will be taken on the plan of the board of directors to increase the authorized number of stock shares of the company from 800,000 shares consisting of 50,000 shares of seven percent cumulative preferred stock with a par value of $100 a share and 750,000 shares of common stock without par value to 1,100,000 shares consisting of 100,000 shares of seven percent preferred stock of a par value of $100 a share and 1,000 000 shares of common stock without par value.

Paper Board Mill for San Pedro

LOS ANGELES, Cal., January 12, 1928.—Establishment of a paperboard mill, with a daily output of fifty tons and an annual pay roll of $300,000, in the Trona plant at San Pedro, Cal., was announced through the San Pedro chamber of commerce. Operation is expected to get under way, it was announced, as soon as the necessary machinery installations can be completed. The Trone plant, with a construction cost in excess of $1,000,000, was built during the World War by British interests for chemical-reduction purposes, but has since lain idle.

The new concern, incorporated with a capital stock of $750,000, has tentatively been named the San Pedro Paper Box Company. Approximately 150 men will be employed at the start of operations, it was said.

Plans for Cost Convention

The Annual Convention of the American Paper and Pulp Association will be held as usual, at the Waldorf-Astoria Hotel, New York City, during the week beginning Monday, February 20. At the request of the officers of the American Paper and Pulp Association, the Cost Association will not hold any meeting on Tuesday, since that is the day selected this year, for the Annual Meeting of the American Paper and Pulp Association. The Cost Association Meetings will be held on February 22 and 23.

A Special Luncheon Meeting for executives, will be arranged for 1 P. M. on Wednesday, February 22. At this meeting two outstanding speakers will define the requirements of an up-to-date business executive, stressing particularly the fact that business has reached a stage where it is no longer wise or profitable to rely on personal opinions or hunches, but that every possible use must be made of the facts available, and when not available, every effort must be made to obtain them. Facts relating to production not only of one's own business, but of the whole industry also, facts regarding the possible demand for one's products, the average production cost, the average selling expense, are all items which require very careful consideration. Such information can only be obtained through the co-operation of the majority of manufacturers in an industry. The benefits of such co-operation will be pointed out, as well as the fact that this is a day of rapid changes in business. To make reasonable profits, it is essential that reductions in cost shall be made wherever possible, and that correct cost figures shall be quickly available, so that executives at all times may have on hand that information which is so essential, if right decisions are to be made promptly.

All member mills are asked to arrange for one of their executives to attend this Luncheon, which is being arranged specially for them. Further details will be published at a later date.

Graduate Courses in Chemical Engineering

The Department of Chemical Engineering of the University of Michigan, Ann Arbor, has just issued a new bulletin of special courses, affording opportunities for special study and other facilities.

One of the important developments in recent years has been the demand from the industries for men with graduate training. This is reflected in the growth of the graduate work. During the present academic year there are 41 graduate students enrolled in the Department of Chemical and Metallurgical Engineering at the University of Michigan, of whom 22 already have the Master's degree and are working for the Doctorate.

The new East Engineering Building gives unusual facilities for advanced laboratory work. The department aims in its undergraduate courses to give a foundation upon which the student may build when he continues graduate work, or when he goes to the industries.

The Department of Engineering Research has important contacts with the chemical industry and several industrial fellowships will be available for graduate students next year. Application should be made by April 1. Copies of the bulletin may be secured by writing the Chemical Engineering Department, University of Michigan, Ann Arbor, Mich.

Consolidated Paper Co. on Exchange

KALAMAZOO, Mich., January 12, 1928.—Seven hundred and fifty thousand $10 par value common stock shares of the Consolidated Paper Company, Monroe, has been admitted for trading on the Detroit Stock exchange. Four plants are now being operated.

In addition to the common stock, the company has an issue of 7 per cent preferred, $2,500,000, of which $2,097,980 is outstanding. Last reports show that gross current assets are $1,841,631 as against current liabilities of $312,198. Gross assets as of July 2, 1927, over eleven and one half million dollars. Surplus amounted to $1,576,-706. Sales during the first six months of 1927 amounted to $5,023,422. Net earnings, last reported were $974,031.

A Vulcalock Couch Roll, 24¾" diameter, 147" long, 1¼ thickness of rubber. Density 300 (⅛ ball).

A New Product for the Paper Industry

Goodrich "Vulcalock" Couch Roll

THIS new construction is an innovation in paper-making equipment. It is built on an aluminum core, assuring uniform density and reduction of weight to one-third that of the ordinary roll with iron pipe core.

The rubber is attached directly to the aluminum base by the new Goodrich "Vulcalock" process, which actually "locks" the soft rubber to the metal surface without requiring an intermediate layer of hard rubber.

This new roll is especially adapted to cylinder machines making tissue, or to installations requiring a light-weight couch roll. Write for descriptive bulletin No. 9740.

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

History of Laminated Wall Board Patents

By Joseph Rossman, Patent Attorney, Washington, D. C.

[NOTE:—This article has been prepared by Mr. Rossman, a chemical engineer who has been an assistant patent examiner in the United States Patent Office for the past few years. Much of this time has been spent in studying the patents relating to wall board manufacture and the compilation submitted herewith will be of interest to many men in the industry who are engaged in making wall board to meet the heavy demands of the building construction industry. In this article, Mr. Rossman has limited his consideration to patents relating to laminated or multi-ply boards.—EDITOR]

It should be noted that no trade names are mentioned inasmuch as trade names and trade marks do not appear in the United States patents. The description of the boards should, however, serve to identify them to the readers of this article.

A single sheet of paper can withstand very little crushing force. It cannot support very much weight or serve as a wall structure by fastening it to studding, but by uniting several sheets of paper a strong and durable board is produced which can be cut, sawed and nailed to studding, forming strong and durable partitions or walls. The Japanese employed paper screens almost 1300 years ago but they were merely heavy sheets of paper and not made up of layers as we find them in the market today.

One type of wall board consists primarily of a number of sheets of paper united to form a rigid unit that may be used anywhere that plaster and lath would be used. It is found on the market in widths of 32 and 36 inches and is used extensively in making partitions in houses and factories. Wall board has been applied to many uses including stage scenery and settings, furniture, show window backgrounds of mercantile stores and remodelling the interior of homes and factories. It is only since 1906 that the first pulp board on the market was called "wall board" with a view to take the place of lath, plaster and wood paneling.

Beginnings of the Wall Board Industry

Although the wall board industry is almost entirely centered in United States credit for its invention must be given to an Englishman, Henry Clay, of Birmingham who was granted patent no. 1027 in 1772 for the method of preparing panels by pasting together several sheets of paper into a board which was dried and dipped in oil or varnish. This board had many uses suggested in the patent as for panels or roofs for coaches, all sorts of wheel carriages, and sedan chairs, panels for rooms, doors and cabins of ships, cabinets, book cases, screens, chimney pieces, tables, tea trays, and waiters. Almost 75 years passed before any further improvements were attempted. In 1845, a British patent no. 10,935 was granted to Charles Bielefeld of London for the preparation of embossed boards to be used in decorating the interiors of buildings. One or more thicknesses of woven fabric were coated with a thick pulpy or plastic preparation of fibrous material. One or more sheets of damp paper were then applied over the composition. Pressure was then applied in molds to obtain the desired embossing. In spite of these patents the ideas therein were not fruitful since the English industry paid no immediate attention to them.

The development of the wall board industry, however, has taken immense strides in the United States. That numerous types of boards have been developed is shown by the large number of United States patents granted. Many other materials besides paper have been employed in the manufacture of wall board. Wood pulp, rags, straw, waste paper, jute, hemp and other materials have been used. One of the earliest United States patents was granted to Silas Hamilton in 1882 who attempted to make both a fireproof and a water proof board by employing sheets made of paper pulp containing potassium bichromate and sodium silicate. Hamilton also improved the type of board invented by Clay by coating the face with a mixture of milk-curd and slaked lime in order to water-proof it. Numerous adhesives have since been developed to unite sheets together. Water-glass or silicate of soda is frequently used for this purpose and is efficient. Mixtures of powdered clay and water-glass, flour paste, various glues, asphalt, dextrin have also been used. The character and life of the board is very often determined by the type of adhesive used.

Wall Board Classification

Wall boards fall broadly into three classes, depending upon the materials from which they are made. The first class includes boards made from rags, straw, bagasse, jute, and hemp. The second class is made from mechanical or chemical wood pulp. The third class is made of wood lath or strips glued together and covered on both sides with paper. Plaster boards might be considered as a fourth class. However, since they usually require a coating of plaster after being applied to the studding they will not be considered here, the other classes of wall boards having a finished surface requiring at times nothing but a coat of paint.

Waterproofing and Fireproofing Wall Board

Due to the various changes in temperature and humidity, warping and shrinking of wall boards has presented a serious problem. Many attempts have been made to overcome this. They usually consist in introducing oils or waterproofing compounds into the

board either in the early or in the late stages of the manufacture. Pitch, rosin, turpentine, paraffin, wax, glue, and asphalt emulsions have also been used.

In order to fireproof the board, solutions of sodium silicate, phosophate of soda, sodium tungstate have been used in treating the sheets prior to uniting or by adding to the pulp before the sheets are manufactured.

The following abstracts of the U. S. patents are chiefly confined to laminated boards, that is, boards made up of layers of materials united together so as to be rigid enough to form a wall. These abstracts give some idea of the development of wall board manufacture and indicate its present trend. The foreign patents granted in wall board are extremely few in number and are therefore omitted.

1. Hale 99,532 Feb. 1, 1870

A sheet of thick straw-board coated with coal-tar.

2. Cobb 111, 611 Feb. 7, 1871

A straw board the upper face of which is coated with oil. The entire board is then coated with linseed-oil and resin.

3. Ellsworth 181,778 Sept. 5, 1876

Paper sheathing composed of two or more sheets cemented together by coal tar, the raw edges being protected by hems containing cords, tapes or wire..

4. Hansen 199,435 Jan. 22, 1878.

Several paper boards saturated with boiled linseed oil and dried, and consolidated into a solid board.

5. Armstrong 206,850 Aug. 13, 1878

Laths of wood saturated with bitumen covered on one or both sides with felt paper.

6 Hamilton 269,815 Dec. 26, 1882

Laminated sheets made of paper pulp, glue, bichromate of potash, alum and silica giving a waterproof and fireproof board.

7. Hamilton 269,816 Dec. 26, 1882

Sheets of paper secured together and corrugated transversely so as to cause its surface to present the appearance of several strips of ordinary weatherboard. For flooring and ceiling the edges are offset to form rabbets.

8. Hamilton Reissue 10,387 Sept. 25, 1883

Several sheets of paper saturated with resin and oil, and then coated with a solution of milk-cured and lime in order to waterproof it.

9. Hamilton 269,817 Dec. 26, 1882

A laminated paper board having its surface marbelized.

10. Adams 294,838 Mar. 11, 1884

Sheets of wood pulp united with a waterproof glue with a layer of fabric between the sheets.

11. Baker 331,469 Dec. 1, 1885

Ornamented board made of two sheets of chemical wood fibre united by glue, the surface of which is embossed.

12 Gardner 361,687 Apr. 26, 1887

A laminated paper board having on its surfaces impressed or embossed with figures.

13. Macdaniel 368,540 Aug. 16, 1887

Sheets of paper united by elastikon and pitch. Elastikon is prepared by heating 8 parts cottonseed or linseed oil with 2 parts of sulphuric acid.

14. Hamilton 449,737 Apr. 7, 1891

Laminated sheets of paper pulp, starch, gum-arabic, benzine, bichromate of potassium. The sheets after being formed are coated with glue and linseed oil.

15. Hamilton 449,738 Apr. 7, 1891

Building board made of united sheets of paper pulp, silicate of soda, alum, ammonia, bicarbonate of soda, silicate of soda. The pulp may be colored to resemble any one of the kinds of hard wood.

16. Mayhew 468,355 Feb. 9, 1892

Slats of wood covered with water proofed paper. A waterproof glue of clay, pitch and dextrine is used. If desired a fireproof cement is used made of clay, plaster of Paris, dextrine and creosote.

17. Eaton 491,092 Feb. 7, 1893

Board formed of inner paper layers saturated with pitch, tar or linseed oil. The outer layers are unsaturated.

18. Mowry 513,710 Jan. 30, 1894

A compo-board made of finely divided wood and cement made of glue and whiting body with longitudinal wooden strips for nailing purposes, and paper or asbestos facings secured to the board.

19. Mowry 516,572 Mar. 13, 1894

A board similar to Patent 513,710 made of round rods and having flat marginal strips abutting the ends of the rods.

20. Sackett 520,123 May 22, 1894

Layers of paper united by plaster or cement. The outer sheet is waterproofed with pitch.

21. Gardner 631,742 Aug. 22, 1899

A decorated and embossed wall board made by heating and drying straw board, saturating it with hot rosin and oil, drying and cooling, cementing the separate sheets with silicate of soda, subjecting them to pressure, painting and embossing.

22. Parker 648,632 May 1, 1900

Pasteboard faced with sheet metal the edges of which are overlapped and seamed.

23. Ryan 649,363 May 8, 1900

Perforated sheets of paper which may be waterproofed united by plaster of Paris.

24. White 652,653 June 26, 1900

Artificial cork sheet with paper facings.

25. Shepherd 800,686 Oct. 3, 1905

Ground wood pulp formed into sheets and united by flour paste. The use of pulp obtained from cane is suggested. The fibres may be treated with caustic soda before forming into sheets.

26. Odell 802,523 Oct. 24, 1905

Paper boards riveted together to form a tongue at one edge and corresponding groove at the other edge. A sheet of fabric is coated with fire and water-proof paint.

27. Ray 885,376 Apr. 21, 1908

Sheets of paper and asbestos united by a glue comprising shellac dissolved in alcohol and flour paste.

28. Clark 921,674 May 18, 1909

A reinforced pulp board made by feeding a wire fabric between layers of pulp and compressing.

29. Bennett 1,014,996 Jan. 16, 1912

Paper sheets united with water proof cement and reinforced with wire netting.

30. Roberts 1,063,736 June 3, 1913

Paper pulp faced with parchmentized paper by means of coal tar.

31. Manson 1,067,825 July 22, 1913

A wall board made from paper or wood pulp. The interior fibres are irregularly arranged whereas the surface has the fibres flattened in a uniform nap.

32. Lewis 1,063,941 June 3, 1913

Composite wood pulp sheet made of inner sheets of poplar pulp and outer sheets of spruce pulp cemented by silicate of soda. The grain of the sheets cross those of the adjacent sheet.

33. Bird 1,074,829 Oct. 7, 1913

A plurality of paper sheets united by sodium silicate. The outer sheets are waterproofed with wax or gum. The inner sheets contain 5 to 10% moisture.

34. Thickens 1,121,951 Dec. 22, 1914

A composite wood pulp sheet having a core of porous ground wood pulp faced with a sheet of tough cooked wood light in color united by sodium silicate.

35. Beadle 1,125,445 Jan. 19, 1915

A compo board made from a core of sawdust and silicate of soda with facings of paper.

36. Lachman 1,130,410 Mar. 2, 1915

A laminated paper board faced with metal veneer united by silicate of soda and rosin.

37. Carey 1,156,753 Oct. 12, 1915

A wood pulp board having facings of vulcanized fiber board secured by water glass or a cement of asphalt and paraffin.

38. McIndoe 1,180,516 Apr. 25, 1916

Paper pulp board having tough paper facings with a design embossed in the facings.

39. Cameron 1,183,165 May 16, 1916

A fibrous board having finely divided colored mineral particles attached by a size. The back of the board is coated with asphalt.

40. Stewart 1,185,142 May 30, 1916

Sheets of newspaper united in a staggered relation so as to break joints.

41. Carter 1,188,040 June 20, 1916

Plies of paper united by dilute sodium silicate and finely powdered hydrous clay.

42. Greenstreet 1,208,952 Dec. 19, 1916

A paperboard comprising an interior filler of chipboard, a reinforcing layer of cloth in each face and facing layers of jute paper.

43. Lowry 1,214, 803 Feb. 6, 1917

A moth repellant wall board made from layers of ground spruce fiber pulp united by a cement of sodium silicate, clay, water. The board is coated with oil of cedar.

44. Toles 1,281,097 Oct. 8, 1918

A wall board made of rice straw, which has been digested with weak alkali, and a filler of uncooked vegetable fibre as tule.

45. Sidwell 1,285,433 Nov. 19, 1918

Board made of a body of ground waste cork and silicate of soda faced with sheets of wood pulp, news or chip board.

46. Robertson 1,292,067 Jan. 21, 1919

Composite board having a core of old newspaper stock or wood pulp to which is affixed asbestos by means of asphalt. The surface of the board is coated with asphalt.

47. Robinson 1,334,637 Mar. 23, 1920

A waterproof and fireproof board made of a plurality of plies of wood fiber paper stock cemented together and coated with cellulose acetate.

48. Robinson 1,334,796 Mar. 23, 1920

Layers of ground or cooked wood fibre, waste paper or mixture of both united by sodium silicate and reinforced by wire netting.

49. Mullin 1,362,888 Dec. 21, 1920

Wall board for outside wall construction made of layers of paper board united by sodium silicate or pitch on one face of which is applied a layer of felt paper saturated with asphalt. On the surface of the felt ground stone, slate, mica or sand is embedded.

50. Lewis 1,374,931 Apr. 19, 1921

A board made of inner plies of ground cooked hard wood pulp such as beech, maple, elm, chestnut, oak and facings of soft wood pulp such as spruce, balsam, hemlock, pine and poplar. The plies are united by sodium silicate.

51. Budinich 1,379,330 May 24, 1921

Outside wall board made of a layer of tar paper, a layer of hair felt over the paper, a layer of asphalt containing cork, sawdust and cement and a layer of wire lath embedded in the asphalt.

52 Chew 1,423,081 July 18, 1922

A fibre board made of chip waste reduced to a cooked, shredded, pressed, dried state and waterproofed with acetate of lime and sulphate of alumina.

53. Perry 1,438,966 Dec. 19, 1922

Layers of mixed fibrous material and comminuted pitch which have been united by heat and pressure, the interior of the board containing a smaller proportion of pitch than the surface.

54. Shaw 1,457,285 May 29, 1923

Wall board made from bagasse or sugar cane which is cooked with caustic soda to disintegrate it. This is the so called "celotex" board on the market.

55. Weiss 1,461,337 July 10, 1923

Composite board made by compacting waste wood, cork, paper pulp or screenings and a binding agent while in a dry state, heating the compact sheet to soften the binder and later applying paper facings.

56. Stericker 1,462,835 July 24, 1923

Plies of paper united by an adhesive comprising 34° Be' solution of sodium silicate in which the proportion of sodium oxide to silicate is as 1 to 4.

57. Shaw 1,468,036 Sept. 18, 1923

Wall board made of layers of bagasse and redwood bark.

58. Adams 1,476,570 Dec. 4, 1923

A board comprising a core made of a plurality of felted sheets of fibrous material and waterproofing material with wood veneer.

59. Bird 1,477,532 Dec. 18, 1923

A plurality of plies of felt saturated with asphalt. One surface has a coating of crushed stone. The other face is covered with manila or kraft paper.

60. Kirshbraun 1,479,043 Jan. 1, 1924

Sheets of paper united with a cold emulsion of pitch.

61. Kirshbraun 1,479,044 Jan. 1, 1924

A waterproof board having paper facing sheets and a core made from an emulsion of pitch, water, clay, dry fibre and infusorial earth.

62. Tchayeff 1,489,678 April 8, 1924

Bundles of straw or reeds tied by wires into a rigid building board.

63. Shaw 1,500,207 July 8, 1924

Ornamental heat insulating panel made of a fibre board of different layers of interlaced fibres covered on one side with a magnesium oxy-chloride.

64. Doe 1,523,104 Jan. 13, 1925

Strips of palmetto wood united with asphalt and covered with facings of paper.

65. Doe 1,523,105 Jan. 13, 1925

Strips of palmetto wood united with asphalt. One face has crushed slate the other face a layer of a phosphate.

66. Shaw 1,532,084 Mar. 31, 1925

A fiber board composed of different layers of different kinds of fibers interlaced, one of said layers of fibres is waterproofed with rosin soap and another layer fibreproofed with aluminum chloride.

67. Shaw 1,544,042 June 30, 1925

A board made of different layers of interlaced pith carrying fibres such as cane, bamboo, sorghum.

68. Sherman 1,548,910 Aug. 17 1925

A fire-resisting weather-resisting wall covering consisting of an asbestos paper body, a backing of roofing paper, a facing of thin kraft paper, an adhesive uniting film of waterproof glue between the body and the facing, and a film of adhesive substance which is volatilizable by heat between the asbestos body and the backing.

69. Sherman 1,548,911 Aug. 11, 1925

Wall covering consisting of a body layer of asbestos paper and an outer surface consisting of plies of wood veneer adhesively secured.

70. Munroe 1,578,344 March 30, 1926

Sheets of celotex cemented together to form a board with tongue and groove edges which are metal reinforced.

71. Lewis 1,588,243 June 8, 1926

A laminated board the facing plies of which are made from ground cooked hard wood and the center plies of which are made from soft wood pulp.

Paper Towel Concern Files Petition

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., January 16, 1928.—Nec Kover Co. Inc., which has operated a plant here for the past two years making paper towels and other specialties, has filed a petition in bankruptcy in the United States Court with liabilities of $1563 and assets at $685, including $355 in accounts and machinery.

Pulping Flax Straw

III.—Hydrolysis and Delignification with Sodium Hydroxide and with a Mixture of Sodium Hydroxide and Sodium Sulphide

By Mark W. Bray[1] and Clifford E. Peterson[2]

This paper, which continues the series of autoclave studies of the effect of various chemicals on the pulping of seed flax straw[3,4,5] deals primarily with the changes produced in an alkaline digestion by replacing part of the original sodium hydroxide with sodium sulphide, while maintaining constant the initial total alkalinity of the solutions and all other cooking conditions. The effect on yield and chemical properties of the time required to bring the autoclave to maximum temperature has been studied and the results compared with similar semi-commercial runs in order to determine the applicability of these chemical data to practical pulping operations.

Material

The flax straw used in these experiments was taken from the same supply of finely ground sample as that used for the experiments reported in the first paper of this series and had the same chemical characteristics.[3]

Apparatus

The same steel autoclave[6] and thermostatic oil bath described in the first paper of this series[3] were again used.

Experimental Procedure

Digestion

A 25-gram sample of ground flax straw, which previously had been dried to constant weight at 105° C. in an aluminum dish provided with a tight-fitting cover, was transferred to the steel autoclave, and 125 cc. of solution containing the desired amount of chemical was added. The autoclave was placed in the oil bath, the initial temperature of which was 20 degrees higher than that desired for cooking, and by manipulating the heating and cooling system, in the manner previously described,[3] the temperature of the autoclave was raised to 155° C. and then was maintained constant to the end of the digestion. The time required to bring the autoclave from room temperature to the final temperature of 155° C. was approximately 20 minutes for all samples except Nos. 375 and 376, which are noticed later.

At the end of the predetermined cooking period the contents of the autoclave were removed for analysis. The pulp was separated from the liquor by filtration through a fine double filter paper in a Buchner funnel, after which a sample of the liquor was taker and the amounts of sodium hydroxide and sodium sulphide remaining were estimated by titration with standard solutions of sulphuric acid and of iodine respectively. The yield of fibrous residue was determined by the method previously described.[3]

Analysis of Fibrous Residue

The fibrous residues from duplicate digestions were mixed and the following determinations made: Cellulose, lignin, total pentosans, pentosans in the cellulose, solubility in 1 per cent sodium hydroxide solution, and copper number. From these data the pentosan-free cellulose and the pentosans not in the cellulose were calculated. Lignin was determined by a modification of the method of Ost and Wilkening[7] and copper number by a slight

[1] Chemist in Forest Products, U. S. Forest Products Laboratory, Madison, Wis.

[2] Junior Chemist in Forest Products, U. S. Forest Products Laboratory, Madison, Wis.

[3] Pulping Flax Straw. I.—Hydrolysis with Sodium Sulphite. By Mark W. Bray and Clifford E. Peterson. J. Ind. and Eng. Chem. 19, 3, 371 (1927). Paper Trade J. 84, 23, 317 (June 9, 1927). Tech. Assoc. Papers, Series X, No. 1, 55 (June, 1927).

[4] Pulping Flax Straw. II.—Chemical Studies with Chlorine as a Pulping Agent. By Earl R. Schafer, Mark W. Bray and Clifford E. Peterson. Paper Trade J. 84, 8, 121 (Feb. 24, 1927). Pulp and Paper Mag. of Canada 25, 7, 209 (Feb. 17, 1927). Tech. Assoc. Papers, Series X, No. 1, 58 (June, 1927).

[5] Pulping Flax Straw. IV.—Further Studies on Hydrolysis and Delignification with Alkaline Reagents. By Earl R. Schafer and Clifford E. Peterson. Printed on page 51 of this issue of Paper Trade J.

[6] This autoclave should not be confused with those described in papers II and IV of this series. In the latter the straw was cooked in quantities of 2 pounds each, whereas the maximum capacity of this autoclave is 350 cc., about 1/40 that of the others.

[7] Cross and Bevan, Researches on Cellulose 3, p. 39 (1905-1910); Chem. Ztg. 34, 461 (1910).

TABLE 1.—RELATION OF PULPING CONDITIONS TO YIELD IN THE DIGESTION OF FLAX STRAW WITH SODIUM HYDROXIDE ALONE AND WITH A MIXTURE OF SODIUM HYDROXIDE AND SODIUM SULPHIDE

Sample No.	Digestion number	Time: To maximum temperature	Time: At maximum temperature	Time: Total	Based on oven-dry weight of straw: Total available NaOH per 100 gm. straw	Chemical added: NaOH: Per 100 gm. straw	Chemical added: NaOH: Concentration	Chemical added: Na2S: Per 100 gm. straw	Chemical added: Na2S: Concentration	Weight of straw	Weight of residue	Yield of pulp	Chemical consumed per actual weight of straw digested: NaOH		Chemical consumed per actual weight of straw digested: Na2S	
		min.	hr.min.	hr.	gm.	gm.	g/l.	gm.	g/l.	gm.	gm.	%	gm.	%	gm.	%
372	202	21	0:39	1	15	15	30	none	none	24.993	14.796	59.20	2.94	11.7	none	none
	203	20	0:40	1	15	15	30	none	none	25.015	14.793	59.14	3.20	12.8	none	none
373	204	21	2:39	3	15	15	30	none	none	24.955	14.245	57.08	3.29	13.2	none	none
	205	23	2:37	3	15	15	30	none	none	24.970	14.254	57.08	3.44	13.8	none	none
374	206	22	6:38	7	15	15	30	none	none	25.035	13.987	55.87	3.70	14.8	none	none
	207	21	6:39	7	15	15	30	none	none	25.043	13.931	55.63	3.67	14.6	none	none
375	208	120	7:00	9	15	15	30	none	none	25.031	14.039	56.09	3.65	14.6	none	none
	209	120	7:00	9	15	15	30	none	none	25.042	14.012	55.95	3.62	14.5	none	none
376a	210	120	7:00	9	15	15	30	none	none	25.289a	14.678	58.04a	3.59	14.2	none	none
	211	120	7:00	9	15	15	30	none	none	25.313a	14.773	58.36a	3.59	14.2	none	none
377	212b	22	3:38	4	10	10	20	none	none	25.076	16.819	67.07	2.50	10.0	none	none
379	216b	20	3:40	4	10	8.8	17.6	2.2	4.4	25.040	15.446	61.69	2.20	8.8	0.40	1.6
	217b	20	3:40	4	10	8.8	17.6	2.2	4.4	25.053	15.792	63.04	2.20	8.8	0.45	1.8
380	218b	21	6:39	7	15	13.4	26.8	3.3	6.6	25.000	12.663	50.65	3.23	12.9	0.66	2.6
	219b	21	6:39	7	15	13.33	26.7	3.3	6.6	25.123	12.481	49.68	3.15	12.6	0.45	1.8
378	214	20	9:40	10	20	20	40	none	none	25.025	12.172	48.64	3.61	14.4	none	none
	215	20	9:40	10	20	20	40	none	none	25.018	12.231	48.89	3.69	14.7	none	none
381	220b	20	9:40	10	20	17.40	34.8	4.3	8.6	24.969	11.257	45.09	3.79	15.2	0.62	2.5
	221	20	9:40	10	20	17.35	34.7	4.3	8.6	25.011	11.250	45.98	3.69	14.8	0.55	2.2

a The straw was extracted with a mixture of alcohol and benzene (33 per cent and 67 per cent, respectively) previous to pulping. These yield figures are based on extracted straw. The average yield calculated similarly for unextracted straw is 56.26 per cent, which is but slightly higher than the yield when the straw is not extracted with organic solvents.

b The resulting pulp was filtered with difficulty.

modification of the Staud and Gray method.[8] The other determinations were made according to methods reported by Schorger[9] except in the case of cellulose, where shorter chlorination periods, as suggested by Ritter, [10] were employed.

Description of Tests

Two series of pulping tests were made in duplicate. In the first series, in which the progress of the reaction with time of cooking was the point under consideration, sodium hydroxide alone was used as the pulping agent and the temperature of the contents of the autoclave was brought to maximum as rapidly as possible and maintained there for the predetermined period of cooking. Since longer periods of time to bring the contents of the digester to maximum temperature are required in practical pulping operations, trials that extended the period of rising temperature to 2 hours were made with samples Nos. 375 and 376 which consisted, respectively, of unextracted straw and alcohol-benzol extracted straw.

In the second series comparative runs were made with sodium hydroxide alone and with a liquor in which four parts of sodium hydroxide were used to one part of sodium sulphide. The total alkalinity of the pulping solutions was maintained the same as in the sodium hydroxide solutions on the assumption that the sodium sulphide hydrolyzes progressively, according to the following equation, as the sodium hydroxide is removed:

$$Na_2S + H_2O = NaSH + NaOH$$

The total available alkali in the resultant liquor, calculated in terms of sodium hydroxide, was equivalent to the hydroxide used plus 0.513 times the sodium sulphide added. In the three comparative experiments made, the available alkali was, respectively, 10, 15, and 20 per cent of the oven-dry weight of the straw. Since the volume of the cooking liquor and the oven-dry weight of the straw were the same for each digestion, the concentration of the chemical increased in proportion to the percentage of alkali. The total time of cooking was increased as the amount of chemical was increased, in order to consume a maximum quantity of chemical. The fibrous residue obtained from these various digestions ranged from a raw to a fairly well pulped product.

Discussion of Results

The pulping data are summarized in Table 1. The close agreement of results in duplicate digestions demonstrates the high degree of reproducibility obtainable in small-scale pulping tests of this character. The third column shows how closely one fundamental condition of the experiments, the period of temperature rise, may be regulated. The almost identical yield values in duplicate digestions, shown in the fourteenth column, prove the possibility of effective control of all essential conditions. Except in cases where the pulp was gelatinous and difficult to filter, the yields check as closely as those of careful cellulose determinations. The figures on the consumption of chemical, while more variant, are nevertheless in fairly good agreement.

[8] J. Ind. and Eng. Chem. 17, 741 (1925).
[9] J. Ind. and Eng. Chem. 9, 556 (1917).
[10] J. Ind. and Eng. Chem. 16, 947 (1924).

TABLE 3
COMPARISON OF AUTOCLAVE AND SEMI-COMMERCIAL DIGESTIONS AT 155 DEGREES C.

Sample No.	Kind of digestion	Chemical: Kind	Chemical: Amount on basis of oven-dry straw %	Time: To maximum temperature hr.	Time: At maximum temperature hr.	Time: Total hr.	Weight oven-dry straw digested	Yield on basis of oven-dry straw %
374	Autoclave	NaOH	15.0	1/3	6 2/3	7	25 gm.	55.8
375	Autoclave	NaOH	15.0	2	7	9	25 gm.	56.0
B-205-1	Semi-com.	NaOH	15.0	2	7	9	108 lbs.	52.8
B-205-2	Semi-com.	NaOH	15.1	2	7	9	184 lbs.	52.4
380	Autoclave	(NaOH (13.4 (Na$_2$S (3.3		1/3	6 2/3	7	25 gm.	50.2
B-208-1	Semi-com.	(NaOH (13.4 (Na$_2$S (3.3		2	7	9	117 lbs.	49.3
B-208-2	Semi-com.	(NaOH (13.6 (Na$_2$S (3.4		2	7	9	123 lbs.	48.8
384	Autoclave	Na$_2$SO$_3$	20.0	1/3	5 2/3	6	25 gm.	64.4
B-222-1	Semi-com.	Na$_2$SO$_3$	20.0	2	6	8	214 lbs.	62.0

Series I

The first half of Table 2 shows the effect of time of digestion on the yield and chemical properties of the pulp. As pointed out in the first paper,[8] in which sodium sulphite was the pulping agent studied, most of the pulping takes place during the initial part of the digestion. After the first hour of cooking the rate of change in yield and in chemical properties of the pulp is relatively small; were the results plotted against time of cooking, the same types of curves as those obtained in the sodium sulphite series would appear. When sodium hydroxide is used, however, the speed of the reaction is much greater than in the case of sodium sulphite; the yields are approximately 10 per cent lower for equal periods of time when the material is pulped with 15 per cent sodium hydroxide (on the basis of weight of straw), as compared with 20 per cent sodium sulphite. Fig. 1, summarizing the results of these experiments and those set forth in the first

TABLE 2.—ANALYTICAL DATA ON FLAX STRAW HYDROLYZED WITH SODIUM HYDROXIDE AND WITH A MIXTURE OF SODIUM HYDROXIDE AND SODIUM SULPHIDE

Sample No.	Total cooking time hr.	Chemical added (Based on oven-dry weight of straw): Alkalinity calculated as NaOH %	NaOH: Per 100 gm. straw gm.	NaOH: Concentration g/l.	Na$_2$S: Per 100 gm. straw gm.	Na$_2$S: Concentration g/l.	Average yield of pulp %	Cellulose: Lignin %	Cellulose: Total %	Cellulose: Pentosan-free %	Pentosans: Total %	Pentosans: In cellulose %	Pentosans: Not in cellulose %	Based on oven-dry weight of residue: Sum of pentosan-free cellulose, lignin, and total pentosans %	Based on oven-dry weight of residue: Copper number	Based on oven-dry weight of residue: Quantity soluble in 1% NaOH solution %
Series 1																
371	0	none	none	none	none	none	100	23.3	53.8	46.8	17.1	7.1	10.1	87.1	8.0	33.7
372	1	15	15	30	....	....	59.17	13.5	46.4	39.9	8.1	6.4	1.6	103.98	3.7	5.5
373	3	15	15	30	....	....	57.08	11.2	45.5	39.0	8.1	6.6	1.5	101.93	4.7	4.7
374	7	15	15	30	....	....	55.75	10.7	44.8	38.1	7.9	6.8	1.1	101.6	5.2	5.0
375	9b	15	15	30	....	....	56.02	11.2	45.0	38.3	7.9	6.7	1.2	102.4	6.5	6.7
376a	9b	15	15	30	....	....	56.26	10.5	45.6	38.8	7.9	6.8	1.1	101.6	5.7	5.0
Series 2																
377	4	10	10	20	....	....	67.07	18.9	46.9	39.9	9.2	6.9	2.3	101.4	7.4	....
379	4	10	8.8	17.6	2.2	4.4	62.37	15.3	46.2	39.8	8.6	6.5	2.2	102.1	7.7	8.9
374	7	15	15	30	....	....	55.75	10.7	44.8	38.1	7.9	6.8	1.1	101.6	5.2	5.0
380	7	15	13.4	26.8	3.3	6.6	50.17	5.3	44.3	38.2	7.2	6.2	1.0	101.0	3.8	4.7
378	10	20	20	40	....	....	48.77	5.7	43.7	37.3	6.8	6.4	0.4	102.1	5.2	4.9
381	10	20	17.4	34.8	4.3	8.6	45.04	2.2	42.2	36.6	6.4	5.6	0.8	100.6	2.3	3.8

[a] Sample No. 376 was extracted with alcohol and benzene prior to cooking. The yield figures are based on the weight of unextracted straw.
[b] Total time at maximum temperature, 7 hours. Two hours were consumed in bringing the autoclave to the maximum temperature; the rate of increase in temperature from 100 degrees C. to 155 degrees C. was uniform.

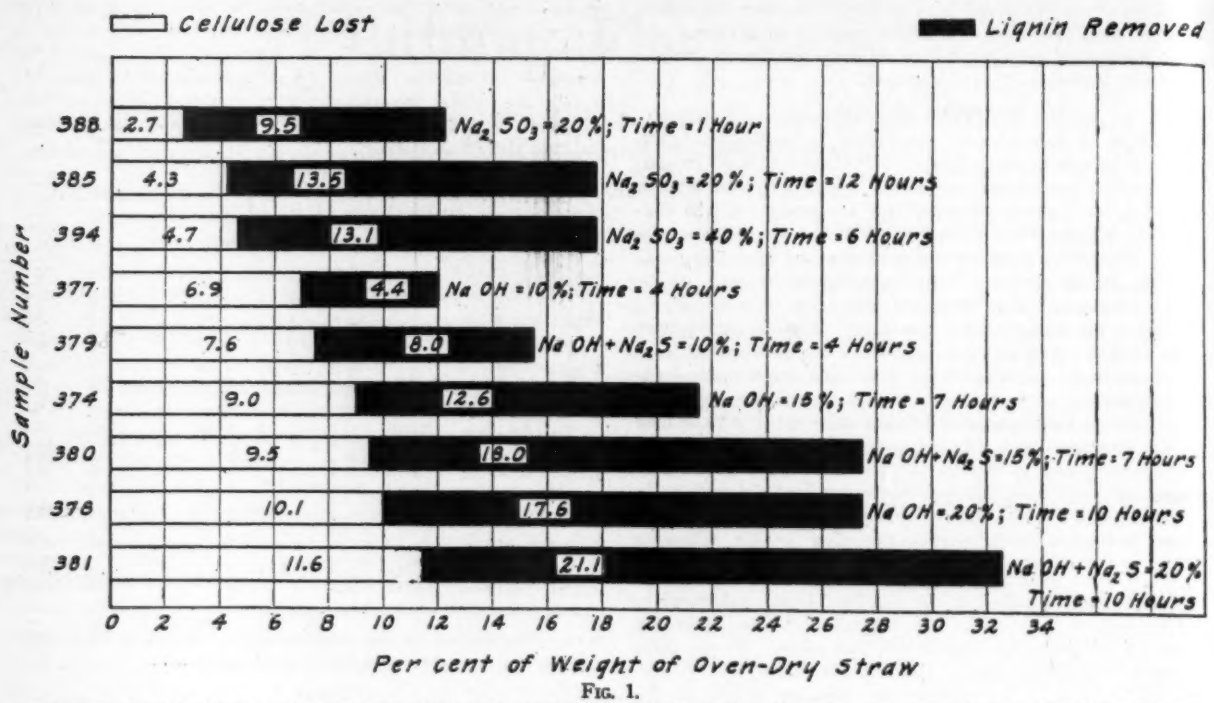

FIG. 1.

Lignin Removal and Cellulose Loss in Flax Straw Digested with Sodium Sulphite, with Sodium Hydroxide, and with a Mixture of Sodium Hydroxide and Sodium Sulphide.

paper, shows that, for the production of pulps with a high yield, sodium sulphite has the advantage over either sodium hydroxide or a mixture of sodium hydroxide and sodium sulphide, in that less cellulose is destroyed for a given amount of lignin removed. This fact agrees with the work of Rawling and Staidl[11] on aspen wood and also of Schafer and Peterson on flax straw,[9] in both of which sodium hydroxide and sodium sulphite were compared as pulping agents.

Effect of Period of Temperature Rise

Table 2 shows that both the yield and the chemical properities of the pulp are practically the same for the cook with a *2-hour rising-temperature period and 7 hours at maximum temperature* and the cook of a *total of 7 hours including a 20-minute rising-temperature period*. Hence, for long cooks of this type the period of rising temperature appears to be of little significance in its effect on the pulp; in short cooks, on the other hand, the period of rising temperature has been found to exert considerable influence.[12] Undoubtedly these two facts result from the rapid pulping action during the early stages of cooking and the retardation of the dissolving action on the straw as the digestion progresses. For these reasons it is possible to compare long autoclave digestions with the corresponding semi-commercial pulping trials, provided the total time of each autoclave digestion is made approximately equal to the time at maximum temperature of the similar large cook.

Effect of Scale of Experiments

Table 3 records comparative yield data on small autoclave cooks together with corresponding semi-commercial cooks performed at this laboratory independently by Schafer and Peterson.[13] The results check well, considering the difficulty of obtaining an accurate yield determination for semi-commercial pulps.

Series 2

The second series of experiments (see Table 2) shows the comparative yields and the chemical properties of pulps produced, under similar conditions of cooking and alkalinity, with solutions of sodium hydroxide alone and with mixtures of sodium hydroxide and sodium sulphide, as previously described. The yield data throughout this series indicate that replacing a part of the hydroxide with the sulphide increases the speed of the reaction. Comparing digestions Nos. 380 and 378 (see Fig. 1), for example, it becomes apparent that the same work is accomplished in 7 hours with 15 per cent alkalinity in the sulphide digestion as is done in 10 hours with 20 per cent alkalinity in the soda digestion, thus saving 3 hours of time and 5 per cent of chemical as well. The sulphide digestions have a further advantage over those employing sodium hydroxide alone in that greater amounts of lignin are removed under the same conditions of pulping without materially increased loss of cellulose; this action gives pulps of correspondingly higher purity. The copper numbers and alkali solubilities of the pulps demonstrate further that less degradation of the cellulose is caused by the sulphide digestion. The pentosan content of the pulps, however, is similar if not identical regardless of whether sodium hydroxide is used alone or in combination with sodium sulphide.

Conclusions

The pulping actions of sodium sulphite,[9] of sodium hydroxide, and of a mixture of sodium hydroxide and sodium sulphide have been studied under the same cooking conditions. The resulting data have brought out the following facts:

1. The relative severity and reaction speed of the three processes, measured in terms of yield, increase in the order in which the pulping chemicals have been named.

2. When small amounts of lignin are removed, for a given degree of delignification less cellulose is destroyed with sodium sulphite than with either of the more alkaline chemicals.

3. The hydroxide-sulphide mixture removes more lignin, while destroying only a little more cellulose, than does a straight sodium-hydroxide digestion under the same conditions of pulping.

[11] Rawling and Staidl, Paper Ind., Sept., 1925.
[12] S. Schmidt-Nielsen; Papir-Journalen 14, No. 24, p. 307 (Dec. 31, 1926); Paper Trade J. 84, No. 19, 43 (May 12, 1927).
[13] Unpublished data.

Pulping Flax Straw

IV.—Further Studies on Hydrolysis and Delignification with Alkaline Reagents

By Earl R. Schafer [1] and Clifford E. Peterson [2]

This paper [3] deals with the effects of the reactions involved in the pulping of flax straw with mixtures of sodium hydroxide and sodium sulphide at two different initial concentrations, and with the comparative effects produced by treatments of sodium hydroxide (either alone or together with sodium sulphide) and sodium sulphite. The experiments were undertaken primarily to furnish information regarding preliminary digestion in the production of pulp by the chlorine process; the data secured, however, warrant discussion now from the point of view of the chemistry of the alkaline pulping processes. The chlorination studies are proceeding on a semi-commercial basis and the results will be published.

Experimental Conditions

Flax grown for seed purposes was threshed and the straw was shipped in bales to the Laboratory where it was cut in a rag cutter without preliminary dusting. Quantities of the cut material of about 2 pounds each were digested in spherical, cast-steel autoclaves (see Fig. 4) in substantially the manner previously described.[4]

The conditions constant for all digestions were the ratio of the volume of solution to the weight of material cooked, 0.6 gallon to the pound (oven-dry basis); the curve followed during the period of the rising temperature, from the initial temperature to 100° C. in 0.5 hour and then to 155° C. in 1.5 hours; and the maximum temperature, which was held unchanged for the predetermined time. The variable conditions were the kinds of chemicals, their ratios to the material, their concentrations, and the duration of the cooking at the maximum temperature.

Methods of Analysis

The results of each digestion were determined by analysis of the spent solution for the constituent chemicals, and of the pulps for yield of crude pulp, lignin, chlorine requirement, and yield of chlorinated residue.

The solutions were analyzed by the usual titration methods. Lignin was determined by the method of Ost and Wilkening [5] and the chlorine requirement and the amount of chlorinated residue were found by the Roe method [6] as modified by members of the staff of this Laboratory.[4]

Discussion of Experiments

The purpose of the two series of experiments Nos. A-211 and A-212 (see Table 1) was to study the progress of the reaction of the straw with various mixtures of sodium hydroxide and sodium sulphide. The initial total available alkalinities in the two series, expressed as weight of sodium hydroxide in terms of oven-dry weight of straw, were 25 per cent and 20 per cent respectively and the ratio of sodium sulphide to sodium hydroxide was 1 to 4 in both series.

Series A-211

The record in Table 1 shows that the total alkali (measured as sodium hydroxide) disappeared rapidly from the cooking solution during the 2-hour period of rising temperature; after the second hour the rate of reaction was relatively very much reduced and it

[1] Associate Engineer in Forest Products, U. S. Forest Products Laboratory, Madison, Wis.
[2] Junior Chemist in Forest Products, U. S. Forest Products Laboratory, Madison, Wis.
[3] Other papers in this series are:
I.—Hydrolysis with Sodium Sulphite, by Mark W. Bray and Clifford E. Peterson. J. Ind. Eng. Chem. 19, 3, 371 (1927); Paper Trade J. 84, 23, 317 (June 9, 1927); Tech. Assoc. Papers, Series X, No. 1, 55 (June, 1927).
II.—Chemical Studies with Chlorine as a Pulping Agent, by Earl R. Schafer, Mark W. Bray, Clifford E. Peterson. Paper Trade J. 84, 8, 121 (Feb. 24, 1927); Pulp & Paper Mag. of Canada 25, 7, 209 (Feb. 17, 1927); Tech. Assoc. Papers, Series X, No. 1, 58 (June, 1927).
III.—Hydrolysis and Delignification with Sodium Hydroxide and with a Mixture of Sodium Hydroxide and Sodium Sulphide, by Mark W. Bray and Clifford E. Peterson. Printed on page 48 of this issue of Paper Trade J.
[4] Pulping Flax Straw. II.—Chemical Studies with Chlorine as a Pulping Agent. loc. cit.
[5] Ost and Wilkening. Cross and Bevan, "Researches on Cellulose," 3, 39 (1905-1910); Chem. Zeit. 461 (1910).
[6] Roe, R. B. Determination of Chlorine Absorbed by Unbleached Sulphite Pulp. J. Ind. Eng. Chem. 16, 8, 808-810 (1924).

TABLE 1.—THE REACTIONS OF FLAX STRAW DIGESTED WITH MIXTURES OF SODIUM HYDROXIDE AND SODIUM SULPHIDE [10]

Series No.	Digestion No.	Alkaline digestion: Duration of cooking [12] At maximum temperature	Alkaline digestion: Duration of cooking [12] Total time	Alkaline digestion: Amount of chemical consumed per 100 lb. straw [11] Sodium hydroxide	Alkaline digestion: Amount of chemical consumed per 100 lb. straw [11] Sodium sulphide	Alkaline digestion: Amount of chemical consumed per 100 lb. straw [11] Total alkali as sod. hydroxide	Alkaline digestion: Yield of crude pulp per 100 lb. straw	Chlorination by modified Roe method: Lignin in crude pulp In the sample analyzed	Lignin in crude pulp Per 100 lb. straw	Chlorine consumed In the sample treated	Chlorine consumed Per 100 lb. straw	Yield of residue In the sample treated	Yield of residue Per 100 lb. straw	Loss of material other than lignin per 100 lb. straw [14] By digestion	Loss of material other than lignin per 100 lb. straw [14] By chlorination
		hr.	hr.	lb.	lb.	lb.	lb.	%	lb.	%	lb.	%	lb.	lb.	lb.
Uncooked straw [9] [13]		...	...	...	...	...	...	27.0	27.0	29.9	29.9	49.0	49.0	...	22.0
A-211 [10]	5	0	2	16.5	0.2	16.6	50.8	15.8	8.1	16.8	8.5	78.2	39.7	30.2	3.0
	4	1	3	14.1	0.8	14.5	45.7	11.7	5.4	12.0	5.5	84.9	38.8	32.7	1.5
	1	3	5	17.0	1.3	17.7	43.7	6.4	2.8	6.2	2.7	88.8	38.8	32.5	2.1
	2	4	6	17.3	1.5	18.1	41.7	6.3	2.6	4.4	1.8	88.7	37.0	33.6	2.1
	3	5	7	17.6	1.7	18.5	42.5	6.4	2.7	5.1	2.2	89.2	37.9	32.9	1.9
A-212 [10]	3	0	2	14.4	0.2	14.5	52.2	18.7	9.7	16.6	8.7	76.2	39.8	30.6	2.7
	4	1	3	15.9	0.6	16.2	48.8	14.9	7.3	11.2	5.5	79.4	38.8	31.5	2.7
	1	5	7	14.9	1.9	15.9	43.3	8.5	3.7	7.1	3.1	83.0	36.0	33.6	3.6
	2	7	9	15.2	1.5	16.0	42.6	7.8	3.3	6.3	2.7	85.0	36.2	34.2	3.1

[9] The threshed straw was cut by means of a rag cutter without preliminary dusting.
[10] Series A-211.—The straw was digested with 22.5 pounds of sodium hydroxide and 5.5 pounds of sodium sulphide per 100 pounds of straw. The total available alkali was calculated by adding to the sodium hydroxide charged or found by analysis 0.5 of the sodium sulphide determined similarly; the total was equivalent to approximately 25 pounds of sodium hydroxide.
Series A-212.—The straw was digested with 17.4 pounds of sodium hydroxide and 4.3 pounds of sodium sulphide to 100 pounds of straw. The total available alkali was equivalent to approximately 20 pounds of sodium hydroxide.
[11] The volume of cooking liquor in both series was in the ratio of 60 gallons to 100 pounds of straw (oven-dry basis).
[12] The period of rising temperature was 0.5 hour from the initial temperature to 100 degrees C. and 1.5 hours for the additional increase to 155 degrees C. at which point the temperature was held constant for the time indicated.
[13] The samples of pulps and of uncooked straw were ground to pass a 40-mesh sieve before the determinations of lignin and the chlorine requirement.
[14] The chlorination method is considered as removing all the remaining lignin.
[15] All weights are on the basis of dry material; "straw" refers to "untreated straw."

continued to drop as cooking proceeded. The sulphur (measured as sodium sulphide), on the other hand, failed to enter the reaction appreciably until the third hour; it was consumed thereafter at a slow but fairly constant rate.

The straw lost weight rapidly during the first 2 hours of the digestion and the yield was reduced practically to a minimum by the fifth hour. The solution of the lignin alone also followed the same course. The solution of the substances that may collectively be called "other than lignin," such as pentosans and easily hydrolyzed cellulose, was more rapid than that of the lignin, reaching a maximum at about the third hour. This behavior is shown graphically in Figs. 1 and 2.

The chlorine requirement, as determined by the modified Roe method, was found to be nearly equal to the lignin in the pulp. A definite relation may reasonably be supposed to exist between the lignin and the chlorine required to render it soluble, but this relation probably is not the 1-to-1 ratio indicated by these experiments, since small amounts of materials other than lignin were removed by the chlorination method. These amounts, approximately 2 per cent of the straw, were fairly constant for each pulp of the series. The ratio of 1 to 1, however, has a practical significance in the production of pulp by the chlorine processes: if the lignin content of the pulp is known, the amount of chlorine required can be predicted with reasonable accuracy; this significance has been borne out in the semi-commercial experiments now under way.

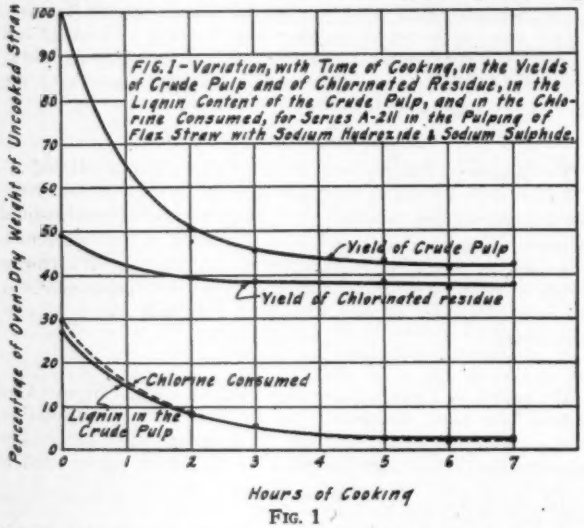
FIG. 1 - Variation, with Time of Cooking, in the Yields of Crude Pulp and of Chlorinated Residue, in the Lignin Content of the Crude Pulp, and in the Chlorine Consumed, for Series A-211 in the Pulping of Flax Straw with Sodium Hydroxide & Sodium Sulphide.
Yield of Crude Pulp
Yield of Chlorinated residue
Chlorine Consumed
Lignin in the Crude Pulp
Percentage of Oven-Dry Weight of Uncooked Straw
Hours of Cooking

FIG. 1

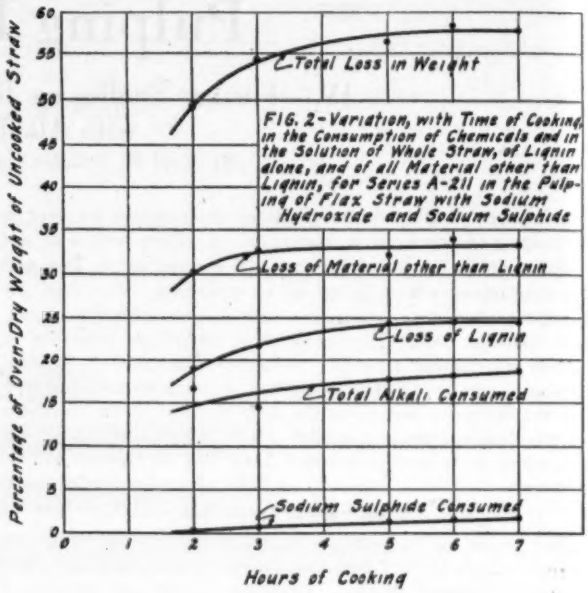
Total Loss in Weight
FIG. 2 - Variation, with Time of Cooking, in the Consumption of Chemicals and in the Solution of Whole Straw, of Lignin alone, and of all Material other than Lignin, for Series A-211 in the Pulping of Flax Straw with Sodium Hydroxide and Sodium Sulphide
Loss of Material other than Lignin
Loss of Lignin
Total Alkali Consumed
Sodium Sulphide Consumed
Percentage of Oven-Dry Weight of Uncooked Straw
Hours of Cooking

FIG. 2

The residue obtained by chlorination of the crude pulp decreased as the time of cooking was increased although the decrease after the second hour was small. The maximum variation was only 2.7

TABLE 3
TOTAL LOSS OF LIGNIN AND OF MATERIAL OTHER THAN LIGNIN IN VARIOUS ALKALINE DIGESTIONS (IN SERIES A-215) OF FLAX STRAW [16]

Digestion No.	1	25 [17]	3	1R [16]	2R [16]	4	4R [16]	5R [16]
Chemicals used and sequence of treatments	NaOH	Na_2SO_3	NaOH and Na_2SO_3 together	NaOH followed by Na_2SO_3	Na_2SO_3 followed by NaOH	NaOH and NaS together	NaOH and NaS together followed by Na_2SO_3	Na_2SO_3 followed by NaOH and NaS together
Loss of lignin in per cent	6.8	14.9	15.1	11.1	21.8	7.8	14.6	20.7
Loss of material other than lignin in per cent	26.2	25.9	30.4	29.1	34.6	26.7	30.4	35.9
Total loss of constituents in per cent	33.0	40.8	45.5	40.2	56.4	34.5	45.0	56.6

[16] See Table 1.
[17] See Table 2.
[18] Values in these columns are the combined losses caused by the two treatments.

TABLE 2.—THE REACTIONS OF FLAX STRAW DIGESTED (IN SERIES A-215) WITH SODIUM HYDROXIDE AND WITH SODIUM SULPHITE, BOTH INDIVIDUALLY AND IN VARIOUS COMBINATIONS, SOME OF WHICH INCLUDED SODIUM SULPHIDE [16]

Digestion No.	Material	Chemical charged—Amount [11] per 100 lb. of—Kind	Material cooked	Straw	Duration of cooking at maximum temperature [12]	Amount of chemical consumed per 100 lb.—Material cooked	Straw	Yield of Crude pulp per 100 lb.—Material cooked	Straw	Lignin in crude pulp—In the sample analyzed	Per 100 lb. straw	Chlorination by modified Roe method—Chlorine consumed—In the sample treated	Per 100 lb. straw	Yield of residue—In the sample treated	Per 100 lb. straw	Loss of material other than lignin per 100 lb. straw [14]
			lb.	lb.	hr.	lb.	lb.	lb.	lb.	%	lb.	%	lb.	%	lb.	lb.
	Uncooked straw [13]									27.0	27.0	29.9	29.9	49.0	49.0	24.0
1	Straw	NaOH	10.0	10.0	2	10.0	10.0	67.0	67.0	30.1	20.2	32.9	22.0	64.8	43.5	3.3
25 [17]	Straw	Na_2SO_3	20.0	20.0	6	18.3	18.3	59.2	59.2	20.4	12.1	17.1	10.1	77.1	45.7	1.4
3	Straw [9]	NaOH	10.0	10.0	2	9.8	9.8	54.5	54.5	21.8	11.9	17.6	9.6	73.7	40.2	2.4
		Na_2SO_3	20.0	20.0		13.6	13.6									
1R [16]	Pulp from Digestion 1	Na_2SO_3	20.0	13.4	6	9.0	6.0	89.3	59.8	26.5	15.9	23.6	14.1	67.6	40.4	3.5
2R	Pulp from Digestion 25	NaOH	10.0	5.9	2	8.7	5.1	73.6	43.6	11.9	5.2	9.7	4.2	84.6	36.9	1.5
4	Straw	NaOH	8.8	8.8	2	8.8	65.5	65.5	65.5	29.3	19.2	28.2	18.5	68.2	44.7	1.6
		NaS	2.2	2.2		0.4										
4R	Pulp from Digestion 4	Na_2SO_3	20.0	13.1	6	9.7	6.3	84.0	55.0	22.5	12.4	17.8	9.8	73.5	40.4	2.2
5R	Pulp from Digestion 25	NaOH	8.8	5.2	2	7.2	4.3	73.4	43.4	14.0	6.3	12.3	5.3	83.0	36.0	1.0
		NaS	2.2	1.3		1.4	0.8									

[9] [11] [12] [13] [14] [15] See Table 1.
[16] "R" indicates a redigestion.
[17] Pulp 25 was divided for redigestions 2R and 5R.

per cent (of the original weight of the straw) for periods of cooking ranging from 2 hours to 7.

Series A-212

The various relations brought out in Table 1 and Figs. 1 and 2 for Series A-211 were found with few exceptions to hold also in this series. The exceptions are believed to be more in the nature of experimental errors than results of any great difference in the pulping reactions. Comparison of the two series shows that, for the same cooking time, yields of pulp slightly higher although containing more lignin were obtained in this one (A-212) and for pulps of the same yield, again those from this series contained slightly more lignin. The yields of chlorinated residues were about the same in both but the amounts of material other than lignin dissolved by the chlorination treatments were slightly higher in Series A-212.

Series A-215

The object of these experiments was to determine the comparative effects produced upon the straw by treatments with (1) sodium hydroxide (a) alone, (b) mixed with sodium sulphide, (c) mixed with sodium sulphite, and (d) alternating with sodium sulphite, and with (2) sodium sulphite (a) alone and (b) alternating with a mixture of sodium hydroxide and sodium sulphide. The data are recorded in Tables 2 and 3.

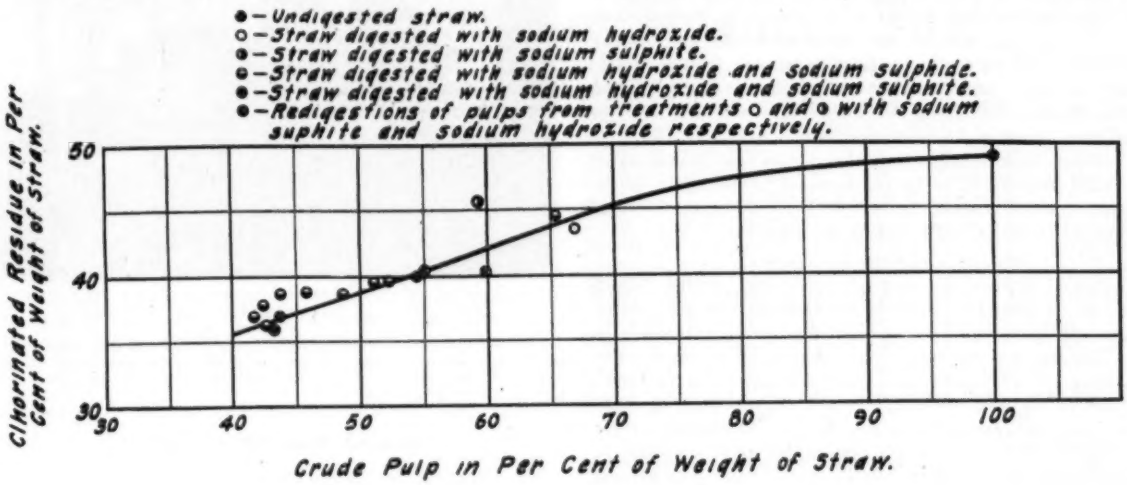

Fig. 3.

The Relative Yields of Chlorinated Residue and of Crude Pulp, expressed as Percentages of the Oven-Dry Weight of the Uncooked Straw, for Series A-211, A-212 and A-215 in the Alkaline Pulping of Flax Straw.

Digestion of the straw with 10 per cent of its oven-dry weight of sodium hydroxide (see Digestion No. 1), under the conditions indicated in the tables, reduced the material other than lignin 26.2 per cent of the weight of the straw, and the lignin 6.8 per cent. Digestion with double the amount, 20 per cent, of sodium sulphite (see Digestion No. 25) under conditions similar except for an increase in time at the maximum temperature in order to allow a nearly complete consumption of the chemical, caused about the same reduction in material other than lignin, namely 25.9 per cent, but more than doubled the reduction in lignin, which became 14.9 per cent. A mixture (Digestion No. 3) of the same individual percentages of the two chemicals (30 per cent total weight) used with the weight of the straw and volume of cooking solution standard for the other digestions failed to dissolve the lignin to any greater extent than the sodium sulphite alone had done in Digestion 25. The amount of material other than lignin dissolved in this mixture of chemicals was 30.4 per cent, 4.5 per cent greater than in the other digestion (considering oven-dry weight of straw 100 per cent).

The available sodium hydroxide in Digestion No. 3 (that added originally plus the amount produced by hydrolysis of the sodium sulphite) was approximately 16 per cent of the oven-dry weight of the straw. A digestion[6] with 15 per cent of sodium hydroxide, under nearly the same conditions, in which 13.4 per cent of sodium hydroxide was consumed, caused the solution of about the same amounts of lignin and of materials other than lignin as in Digestion No. 3, indicating that in a digestion of this kind the main reaction is an alkaline hydrolysis of the straw material. The sulphite radical also entered into the reaction in No. 3, however, since sodium sulphite equal to 13.6 per cent of the weight of the straw was consumed. The sulphite radical may have aided in rendering the straw material soluble or it merely may have combined with the products of the hydrolytic reaction; its behavior in this respect is not clear. On the other hand, in digestions of the nature of No. 25 where sodium sulphite was used alone, the hydrolysis of the chemical would furnish only 6.4 per cent of sodium hydroxide, which is not sufficient to cause the solution of 40.8 per cent of the straw, and it is plainly evident that in such cases the sulphite radical, probably reacting as sodium bisulphite, aids directly in rendering the straw soluble.

To determine the effects produced by alternating treatments with solutions of sodium hydroxide and sodium sulphite the pulp from Digestion No. 1 was recooked with 20 per cent of its weight of sodium sulphite (see Digestion No. 1-R) and that from Digestion No. 25 with 10 per cent of its weight of sodium hydroxide (see Digestion No. 2-R). The other cooking conditions of the redigestions were identical with those of the corresponding previous digestions. When the sequence of treatments was the hydroxide followed by the sulphite, the total loss was 40.2 per cent of the weight of the straw, which was 5.3 per cent less than when the two chemicals were used together; the difference was mainly due to the lower amount of lignin dissolved by the alternating treatments. Since a large amount of material other than lignin had been dissolved by the hydroxide in the first digestion, it might be expected in the redigestion that the sulphite would be able to react to a greater extent in rendering the lignin soluble. While the amount of lignin dissolved per unit weight of sodium sulphite consumed was nearly the same in the Redigestion No. 1-R as in Digestion No. 25, however, the rate of the reaction was greatly retarded and only 4.3 per cent of lignin was removed in addition to that previously taken out in Digestion No. 1.

Numerous instances are on record where preliminary steaming, extraction, or digestion have rendered the material unfit for satisfactory pulping. Michel-Joffard[7] reports that Bordeaux pine from

[7] Michel-Joffard, R. Production of Pulp from Bordeaux Pine. Paper Trade J. 79, 18, 159TS (Oct. 30, 1924).

which the resins had been removed by a digestion with sodium hydroxide could not subsequently be pulped by the sulphite process. Miller[8] has found that an acid hydrolysis preliminary to sulphite cooking so altered the lignin of spruce wood that it could not be dissolved by the sulphite liquor. A satisfactory explanation of this phenomenon has not been offered. Mild hydrolytic action, whether alkaline or acid, appears to alter the character of lignin so as to retard its solution in sulphite or bisulphite digestions.

When the sequence of treatments was reversed, however, sodium sulphite being *followed* by the hydroxide, the total lignin dissolved was 21.8 per cent of the weight of the straw (see Digestion No. 2-R), which was practically equal to the combined lignin losses caused by the separate action of these chemicals directly on the straw. In other words, in these experiments on straw the action of sodium hydroxide in dissolving lignin was not inhibited by a previous treatment with sodium sulphite.

The conditions in Digestion Nos. 4, 4-R, and 5-R were respectively identical with those of Nos. 1, 1-R, and 2-R except that a solution containing four parts of sodium hydroxide and one of sodium sulphide was used instead of a solution of the hydroxide alone. The total alkalinities of the two solutions were equivalent. The substitution of the hydroxide-sulphide mixture for the straight hydroxide solution caused slightly greater losses in both lignin and material other than lignin, but in general the results were the same as those observed for Digestions Nos. 1, 1-R, and 2-R.

The chlorine requirement of all these pulps was found, as in Series A-211 and A-212, to be nearly equal to the lignin in the pulp, but in general slightly higher yields of chlorinated residue were obtained in Series A-215 than in the other two.

Yield of Chlorinated Residue

The relation between the yield of chlorinated residue (which may also be considered as the yield of cellulose) and the yield of the crude pulp from which it was isolated is shown graphically in Fig. 3. The data for this curve were taken from all three series and represent six different types of treatments applied to the straw. In that part of the curve from a 70 to a 40 per cent yield of crude pulp, the slope indicates a 1 per cent loss in chlorinated residue for each 3 per cent loss in crude pulp. This ratio conforms to previous observations for another lot of straw cooked with various amounts of sodium hydroxide.[4]

Summary

1. A study of the progress of the reactions taking place during a digestion of flax straw with mixtures of sodium hydroxide and sodium sulphide has shown the solution of the lignin to be much slower than the solution of those portions of the material called "other than lignin."

2. The weight of chlorine required to render soluble the lignin in the crude pulp was found to be nearly equal to that of the lignin, for six different types of digestions.

3. The yield of chlorinated residue obtained by the modified Roe method was observed to bear a definite relation to the yield of the crude pulp from which it was isolated. Between the limits of 70 and 40 per cent in the yield of crude pulp, the average loss in cellulose was 1 per cent for each 3 per cent loss in pulp.

4. The solution of the straw during a digestion with a mixture of sodium hydroxide and sodium sulphite appears to be due principally to an alkaline hydrolysis, whereas during a digestion with the sulphite alone such solution, particularly that of the lignin constituent, seems to be caused largely by a reaction with the bisulphite radical.

5. The solubility of lignin in a solution of sodium sulphite was found to be lowered by a preliminary mild hydrolysis with a solution of sodium hydroxide.

Fig. 4.—The Cast-Steel Autoclaves

Each autoclave[24] consists of two hollow, concentric steel spheres mounted on trunnions, with a globular space between them and having a suitable charging opening, with its cover, leading to the inner sphere. One trunnion forms an inlet for the admission of steam or of cooling water to the globular space, which may be drained through a pet cock; the other encloses a thermometer well which reaches the center of the inner sphere, and also supports a guard for the projecting stem of the thermometer. Leading into the inner sphere, opposite the charging opening, is a small hole for gauge attachment or for blow-off; it was not used in the experiments reported here. The main dimensions follow: outside diameter, 15½ inches; inside diameter, 12 inches; thickness of each wall, ½ inch; depth of globular steam space, ¾ inch; diameter of charging opening, 3⅜ inches; length of thermometer, 27¾ inches; range of thermometer, 20° C. to 250° C.; first gradation of thermometer, 13 inches from bulb. A ¾ h.p. geared motor drives the 3 autoclaves at about 1 r.p.m. through a common shaft and individual worm gearing. The ½ inch steam lines are equipped with Mason pressure regulators and gauges which

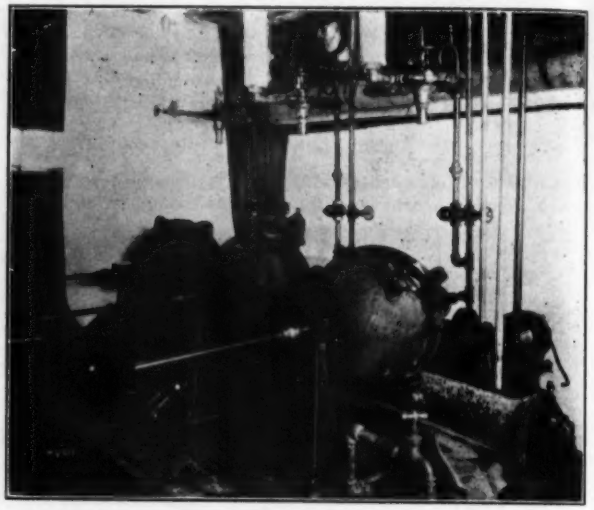

Fig. 4

control and indicate the steam pressure in the globular heating space. At the end of the digestion period the autoclaves are cooled sufficiently to permit removal of the covers and the contents then are washed out into the lead-lined trough, which leads to a screen.

[8] Miller, R. N., Swanson, W. H., Soderquist, R. Chemistry of the Sulphite Process. IX.—The Influence of Hydrogen-Ion Concentration. Paper Trade J. 82, 9, 131TS (Mar. 4, 1926).

[24] Sidney D. Wells, formerly Engineer in Forest Products, U. S. Forest Products Laboratory, Madison, Wis., designed the autoclaves and equipment.

Annual Meeting of TAPPI

The Technical Association of the Pulp and Paper Industry will hold its thirteenth annual convention in New York on February 22 and 23. All sessions will be held, as in past years, at the Waldorf-Astoria Hotel.

On the two days preceding those on which the general sessions and sectional meetings are held there will be the regular meetings and luncheons of the executive committee. Provision will be made for taking care of any committees or other groups that may be interested in holding conferences.

Official announcement of the program will be published very soon. It may be said, however, that the papers to be presented are unusually interesting and the indications are that the attendance will be larger than ever.

The annual banquet of the Association will be held on the evening of Washington's Birthday, February 22nd, at the Hotel Commodore. Exceptionally fine speakers together with an unexcelled series of entertainment features will mark this annual affair as one that no member of TAPPI will care to miss.

Usage of Lubricating Oil

The following interesting figures relating to the consumption of lubricating oil are reported for a group of mills making news print:

Mill	Total gals. oil per ton of finished product	Gals. oil per ton of paper. For paper machines only
1	.426	.281
2	.294	.217
3	.369	.165
4	1.297	.397

Section of the

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THE AMERICAN PAPER AND PULP ASSOCIATION

Edited by

THOS. J. BURKE, C. A., Sec.-Treas.

The Corporation Income Tax*

Since 1920 there have been three major revisions of the Federal Taxes; in 1921, 1924, and 1926. These revisions have resulted in the reduction of surtaxes on individual incomes from a maximum of 65 per cent to 20 per cent; reduction in normal tax rates on individuals from 12 per cent maximum and 6 per cent minimum to 5 per cent and 1½ per cent respectively; increased exemptions and deductions for individuals; a cut of one-half in estate taxes and doubling of the exemption; and repeal of war-time excise taxes (so-called nuisance taxes) except in a few instances such as the automobile and admission taxes which have been greatly reduced. In brief, all war-time taxes have been repealed, or tax rates have been drastically cut in every case except the corporation tax which has been increased from 10 to 12, 12½, 13 and 13½ per cent. We strongly urge, that in proposing to the House, reduction of present taxes, the Ways and Means Committee give first consideration to this one tax, which in past revisions instead of having been reduced with all other taxes, has been moved upward.

Most substantial business, except in agriculture, today is done in corporate form. Corporations predominate in most industries. Corporations supply most of our necessities and nearly all of our luxuries. They provide our financial and transportation facilities. What is customarily called the "cost of living," with the partial exception of foodstuffs, is practically a price index of corporation products. Yet even today, nearly ten years after the war—when almost any form of taxation productive of revenue was defensible—the tax rate on corporation incomes is more than two and one-half times the corresponding rate of tax on any other form of doing business.

Stockholders in corporations represent the largest single body of taxpayers in the country. Individual tax rates have been decreased and exemptions increased until less than 5 per cent of the qualified voters pay a direct income tax to the Federal Government. No form of tax relief now available is more necessary in the interests of equity and justice than tax relief for corporations. No form of tax relief will confer wider social benefits.

Corporation Tax Now on War-Time Basis

At the present time the corporation income tax is the only Federal tax which is still on a war-time basis; in fact, the rates have been increased from 10 to 13½ per cent since the war. In the face of decreasing demands on the Treasury and of huge annual surpluses, collections from the corporation tax steadily increase both in amount and relative importance to all Treasury receipts. Corporation tax collections were $881,000,000 in 1924 and $1,308,000,000 in 1927 as compared with individual tax collections of $661,000,000 and $991,000,000 for those two years an increase in corporation tax collections of $427,000,000 and in individual tax collections of $250,000,000; in percentage an increase of 48.5 per cent as compared with 37.3 per cent.

The revenue resulting from increases in the corporation tax rate in 1921, 1924, and 1925 was not necessary to meet Government expenditures. In every case the budget surplus exceeded the increase in corporation tax collections over the previous year. The astounding sum of $2,390,000,000, the total excess of receipts over expenditures for the last six years, shows clearly that far from being necessary to increase corporation tax rates a substantial reduction could have been made without interfering with sound budgetary practice.

The purpose of a budget system is to balance receipts and expenditures; continual surpluses indicate faulty budgetary practice to the same extent as continual deficits. President Coolidge said in his address to the Business Organization of the Government on June 30, 1924:

"A Government which lays taxes on the people not required by urgent public necessity and sound public policy is not a protector of liberty, but an instrument of tyranny.*** If with increasing business our revenues increase, such increase should not be absorbed in new ways of spending it. They should be applied to the lowering of taxes. In that direction lies the public welfare."

Nevertheless since that date (June 30, 1924) the corporation tax has been increased and *excess tax* collections for the four years 1924, 1925, 1926 and 1927 totalled $1,768,638,000.

Discrimination in Taxation of Corporations

It has been estimated that 80 per cent of the volume of business in the United States is done by corporations. Under the rates of tax now in force, business which finds it necessary or expedient to incorporate must pay a tax of 13½ per cent on net earnings as compared to a maximum tax of 5 per cent applying to their competitors who function as partnerships or individuals.

The imposition of a higher tax on business done in corporate form than upon competitors, merely because they operate as partnerships or individuals, is an unwarranted discrimination in taxation which except in emergency cannot be justified. There is no sound reason why the tax on corporations should materially exceed the tax applying to business conducted in partnership or individual form. The Federal Government confers no benefits upon business in corporate form which it does not equally confer on any other form of doing business, except the right within

* National Lumber Manufacturers Association Bulletin.

strict limits to withhold earnings from distribution and hence from liability to surtax.

The present tax discrimination against corporate business is an outgrowth of a war emergency long since past. Congress should enunciate clearly its purpose of restoring the tax rates to their pre-war status which embodies the sound principle of taxing all business alike.

Basis of Corporation Tax Not That of True Income Tax:

All corporation taxees are shifted, either to buyers of its products or to its stockholders. Since the corporation is a fictitious entity, it cannot *absorb* taxes or any other charges; eventually they must be borne either by purchasers of the corporation's goods or by the stockholders. Taxation of net profits of corporations, therefore, does not result in taxation in proportion to ability to pay but distributes the tax burden in an inequitable fashion either to consumers or stockholders, regardless of income status. And whether corporation taxes are paid by consumers or by stockholders, the burden tends to fall more heavily on the lower income groups.

Entire Repeal of This Tax Not Now Possible:

As a practical fact, it is recognized that the Government, unless it increases other forms of taxation, cannot at this time reduce by 65 per cent (to equalize it with the tax on other forms of business) a tax which in 1927 brought in receipts of $1,308,000,000. But, in view of the fact that the corporation tax runs counter to the true function of an income tax, receipts from this source should be reduced to the lowest possible level consistent with sound Treasury finance. In 1925, corporation tax collections totalled $916,000,000; in 1926, $1,095,000,000; and in 1927, $1,308,000,000. Instead of becoming less dependent upon revenue from the present inequitable and discriminating corporation tax, the Government is collecting each year a steadily larger proportion of its total revenues from that source. Under the circumstances the corporation tax rate should be reduced to the lowest possible level compatible with sound Government finance and the tendency should be toward further reductions as circumstances warrant until the tax on corporations is in line with the normal tax on individuals and partnerships. The fact is that proportionately the corporation rate is too high and the individual normal rates are too low.

Incidence of the Tax:

Considerable difference of opinion respecting the incidence of the corporation tax has been expressed. Whether passed on to consumers or passed on to stockholders, the tax is inequitable.

In a competitive market, prices are fixed by the market, that is, by supply and demand and, except in the most general way, they are not materially influenced by individual costs of production. While the business man may desire and attempt to shift the tax to the public by increasing his prices, and by including such taxes in his costs and earning a satisfactory margin of profit above his costs, and may actually think he is doing so, he usually has little or no control over prices. Since the tax is a net profits tax and not a sales tax, it does not fall on those producers selling at or below cost of production. Any increase in price tends to increase the production of the unprofitable producer, and the supply of available goods. Oversupply, in turn, tends to force prices downward. In other words, the tendency of prices to rise upon the imposition of a general profits tax is offset by the tendency of increased production by marginal producers who are not subject to tax.

If the tax cannot be passed on to the consumer in the form of increased prices, it must be paid from corporation profits and subtracted from the dividends to stockholders.

The corporation tax is inequitable regardless of whether stockholders are persons of large or small incomes. In effect, it imposes a normal tax of 13½ per cent on an individual's income from business done in corporate form, instead of a maximum of 5 per cent which applies to the remainder of this taxable income. Taxpayers in the highest brackets are paying normal taxes on their income through corporations at a rate more than 2½ times as high as that applying to the remainder of their income. Surtaxes apply equally to dividends and other taxable income. And corporation stock ownership is not confined to persons of large incomes but is widely scattered; the largest American corporations are not owned by men of great wealth but by millions of people of small and moderate incomes. The burden on stockholders who are not within the surtax brackets, and the many who are entirely exempt from individual income taxes is, of course, immeasurably greater than on taxpayers in the higher brackets. And since the net earnings of corporations, upon which taxes are assessed are never entirely distributed except upon dissolution, the tax burden is actually considerably greater than is indicated by the rate of 13½ per cent.

Numerous estimates of the number of stockholders in the United States have been made, varying from 3,000,000 to 20,000,000 people. It is not necessary to determine the actual number of stockholders for it is apparent even from the lower of these two figures, which seems unduly conservative, that stock ownership is widely scattered and stocks must, to a considerable extent, be in the hands of people of small or moderate incomes. Statistics of income for 1925 show that corporations in that year paid dividends of $5,189,000,000. all of which was reported as received by individuals or other corporations, except about $550,000,000. This $550,000,000 must have been paid to stockholders who came within the exemption limits and who, therefore, filed no returns. In other words, it is apparent that approximately 15 per cent of the corporation stock in the United States is held by persons entirely exempt from income taxes except to the extent that they are burdened by the corporation tax.

A further 18.6 per cent is held by individuals reporting net income less than $10,000 and who therefore pay an average tax of only 0.26 per cent, except their income from corporations on which a tax of 13½ per cent is assessed.

Debt Reduction Versus Tax Reduction:

In certain quarters, it has been proposed that tax reduction should go slowly at the present time since any surplus which may accrue can usefully be applied to the further and more rapid reduction of the public debt. No one will question the appeal of this argument but it is based upon faulty premises.

The Sinking Fund Act provides annual appropriations for the purpose of debt retirement and the Treasury has estimated that the money thus appropriated will be sufficient to retire the *domestic* public debt in approximately 25 years from 1919, that is, 1944. Now, due to the application to debt retirement of surplus sums remaining in the Treasury at the end of each fiscal year since 1920, debt retirement has proceeded about twice as rapidly as contemplated by law. The proposal is to continue this system; in effect, to continue present tax rates so that surpluses may continue to accrue and be applied to debt reduction.

Corporation stockholders already bear their just share of debt retirement through the assessment of individual income taxes and other taxes. Through the collection of unnecessary revenues, largely due to excessive corporation taxes, and the application to debt retirement of the surplus sums produced thereby, they have in fact paid much more than their equitable share of the debt. Debt retirement due to excess tax collections derived from inequitable tax rates cannot be justified under any circumstances. With the public debt reduced to less than $18,000,000,000 and being retired in an orderly manner through the Sinking Fund, and with debt settlement with our former Allies, which will eventually bring in more than $20,000,000,000 in principal and interest, it is difficult to see the emergency which demands retention of discriminatory and inequitable taxes.

Furthermore, money which can be borrowed by the Govern-

ment at 3 per cent or less, is worth from 5 per cent to 6 per cent to the taxpayer.

Tax Exemption of Small Corporations:

It has been often suggested that those in control of small corporations bear the brunt of the burden of the present corporation tax and that tax relief should take largely the form of an increased exemption to corporations. A proposal of exemption of the first $25,000 of net corporate income has in fact been made by a prominent state bankers' organization and is understood to have some currency and support.

It has been said that no line of manufacturing activity can be more easily undertaken than lumber manufacture. A cash outlay of $200. for a portable mill, on the installment plan, will enable a man to start the manufacture of lumber in some sections. The ease with which this can be done accounts, to a surprising degree, for the constant over-production of lumber, wasteful operation, bankrupt competition, and barren cut-over lands which are among the forestry problems of today. Forest engineers, economists, lumber manufacturers and others have, for years, been trying to find a remedy for such conditions. They have been seeking a plan of operation, which would permit practical lumbering on a basis assuring a continuous annual yield of lumber from the land under the control of a single operation. Many such plans have been worked out, practically all of which are centered around the principle of the so-called "sustained yield." This proposal contemplates cutting of mature timber in accordance with a carefully worked-out schedule of operations which would permit natural or artificial reforestation during the cycle of cutting, thus eliminating large cut-over and non-productive land areas.

The prime essentials necessary to carry out any of these plans are: (1) a large accumulation of capital sufficient to own and manage large tracts of forested lands; (2) incorporated activity; (3) an equitable and practical system of taxation. While the tax problem is particularly a question of state and local taxes, high Federal taxes which take a substantial portion of the profits, are, naturally, an added burden. The point I make. in this connection, however, is that any plan which contemplates the taxation of corporations according to size, or which imposes on larger corporations a heavier tax burden than on the smaller, will result in continued and increased operations by the small units which do not find it profitable, practicable or expedient to undertake reforestation or utilization of waste lands. In other words, reforestation by private interests can be carried out only by relatively large corporations. If you unduly handicap the corporation large enough to maintain an economical operating unit and to carry timber lands sufficient to keep the mills continuously supplied with raw materials, you can count private enterprise out of the picture as a means of solving the so-called forestry problem.

It has been shown above that corporation taxes are eventually paid by stockholders and that stockholders of the United States are now measured by millions. There are several times as many citizens today paying indirectly through corporations, 13½ per cent on a portion of their earnings, as are paying *directly* any individual income tax whatsoever.

Some Examples

It may be pointed out, for example, that the American Telephone and Telegraph Company has over 430,000 stockholders with an average investment of less than $3,000. Of these, more than 160,000 are employees with an average investment of $2,900. No one stockholder owns as much as 1 per cent of the outstanding stock. The U. S. Steel Corporation has over 144,000 stockholders and 8 per cent of its entire stock is owned by employees. The Standard Oil Company, of New Jersey, has 62,000 stockholders of which 17,400 are employees. Innumerable examples can be cited. Over a million people are stockholders in American railroads and over 2,600,000 in gas, electric and power companies. The adoption of the proposal to exempt from taxation corporations having a net income of less than $25,000 would favor less than 20 per cent of the corporate business of the country at the expense of the remainder, and while it might help the small corporation it would not materially help the small stockholder. None of the other tax reduction proposals being urged approach in importance the necessity for reduction of the corporation tax rate. Corporation tax reduction will confer by far the widest and greatest social and economic benefits. Essentially the question is one of fair and just taxation. Inequity and discrimination have no place in a permanent tax system. Congress should make at once as large as possible a reduction in the corporation income tax rate and should do so with the clear intention of making such further subsequent reductions as may be necessary to eliminate the present great discrimination against the conduct of business in corporate form. The Government should be just before it seeks to be generous.

New Calendar Proposed

The League of Nations at Geneva has decided to issue invitations to all the nations consisting the League to name committees to decide upon simplifying the calendar. Two different schemes are to be taken into particular consideration, one a quarter year plan consisting of two 30 days months and one 31 day month, while the other scheme, as originated by Moses B. Cotsworth, formerly associate of Sir Sandford Fleming, builder of the Canadian Pacific Railway, and instigator of the movement which resulted in the adoption of standard time all over the world comprises a 13 month year of four weeks each, instead of the present year with 12 months of unequal length.

One of the chief advantages, it was stated, of the new scheme, would lie in the circumstances that periods and terms relating to, for instance, bookeeping systems and the like, would be made of similar duration, thus making filing and registering more uniform and easy. A circular has been sent out by several large American business concerns heartily endorsing the scheme.

Mr. Cotsworth, after assisting the League of Nations Committee in this matter, is at present a guest on this continent, and in Rochester, N. Y., he has just made a statement to the effect that his work with the League of Nations was the outcome of a request for this calendar reform, received in 185 applications from 38 different nations.

Another provision which the proposed calendar would make is for all holidays to be placed on Mondays, by many considered "a decided advantage to industry" as well as a convenience to the public at large.—The Canadian Chartered Accountant.

M'Kee Will Manage Sylva Pulp Concern

[FROM OUR REGULAR CORRESPONDENT]

ASHEVILLE, N. C., January 16, 1928.—E. L. McKee of Sylva, head of the Parsons Tanning Company, has been named vice-president and manager of the Sylva Paper Company, it was learned here following a meeting of the directors of the new paper pulp company in Dayton, Ohio.

The president will be John G. Sutherland, of Dayton, one of the chief executives of the Mead Paper Company, and the directors are the officials of the Armour Leather Company, and the Mead Paper Board Corporation, who control the Sylva industry, it was learned from Mr. McKee, who was in Asheville Thursday.

Campbell King, construction engineer of the Management Engineering and Construction Company, which will build the paper pulp plant, has arrived to confer with Mr. McKee over plans for beginning building on a site adjoining the Parsons Tanning Company plant in Sylva.

The manufacture of chestnut wood and bark into extracts and paper pulp is not merely an industry for Sylva, but will be of vital importance to the whole of western North Carolina, as the wood is drawn from all parts of western Carolina, and the marketing of which wood gives more widespread distribution of money.

COST SECTION

Business Control Through Budgeting*

How Budgeting Has Been Found Practical in Many Lines—Business Principles of Plan and Its Advantages

By John H. MacDonald [1]

We may define budgeting simply by saying that it is an estimate of future needs. If you will stop to think a minute you will see that all of us, in our own personal life as well as in our business, do budget, as a matter of fact, whether we have a formal plan for doing so or not. When we define budgeting as "an estimate of future needs," we are thinking of needs of every type. These may be needs of labor, of materials, of sales, of money, of advertising, of plant and equipment or of anything else of which you wish to think.

The principles of budgetary control are three in number:

1—Budgeting implies pre-planning.

2—Proper budgeting assumes coordination and cooperation between the various departments.

3—To be effective, budgets must be followed up and controlled after they are put into operation.

A standard cost is, after all, nothing more or less than an estimate or quota which has been set up after consideration of past performances and probable future requirements. Like any operating activity, an attempt is made to keep the performance within the standard of allowed cost. The differences between the standard cost and the actual cost represent the variation from the plan.

A budget system has precisely the same purpose——namely, the establishment of a standard or estimate and the comparison of the actual performance with this estimate. Consequently, a budget system is only an extension of the principles of standard costs and should not be viewed as something very new or as a radical departure from that with which we have been familiar for some years.

A wide variety of lines and kinds of business have found it practical to operate under a budget system. I can personally refer you to several companies in each of the following lines of business which are now operating successful budget systems:

Banks, railroads, newspapers, ice cream manufacturing plants, construction and contracting companies, hotels, canneries, metal working establishments, garment manufacturers, knit goods manufacturers, department stores, oil companies, lumber companies, furniture manufacturing plants, shoe manufacturers, foundries, printing, automobile accessories.

A few examples of the results of budgeting in terms of comparisons between estimated and actual figures may be of interest:

1—A bank located in New York City estimates expenses within 1 per cent and in many cases within 1/10 of 1 per cent. The Chicago Trust Company in 1924 estimated its net profits only $2,000 over actual net profits.

2—One house in a chain of hotels shows a certain classification of receipts within 7/10 of 1 per cent of the estimated amount and in the same hotel the total receipts the same period were 96.42 per cent correct.

3—Newspapers. A mid-western newspaper estimated both income and expense within 5 per cent of actual; publishing houses within an average of 3 per cent of actual. A well known eastern department store in one department budgeted estimated sales $31,000, actual sales $30,921. A metal working plant secured 99.72 per cent correlation between estimated and actual figures for production and sales.

4—The American Telephone and Telegraph Company finds it practical to forecast revenue and expense construction work and total station gain for five years in advance.

5—An ice company has no means as yet of forecasting the weather but finds it possible to operate on a budget plan.

6—Armour and Company—the president recently announced a saving of $10,000,000 in 1925 as a result of the installation of the budget plan.

Perhaps some of you are wondering just what the best way is to commence the installation of a budget plan in your particular business. In this connection I suggest that you first prepare estimates of the kinds of expenses easiest to estimate and easiest to control. I very freely admit that all expenses bear a definite relationship to income from sales and that therefore, one must first know what the income is going to be before he can make a fair estimate of expenses. However, in every business there are many expenses, which are relatively constant and fixed, regardless of the volume of sales.

Furthermore, no matter how well the idea of budgeting may be sold, one will always find skeptics in the organization. Is it not more sensible, therefore, to start by budgeting those items which one can be reasonably sure of estimating with a fair degree of accuracy and as a result be able to show a high degree of correlation between estimated and actual expenses at the end of the budget period, rather than to plunge in at once to the budgeting of the item which is by far the hardest of all to estimate, namely, sales?

As a matter of fact, if the latter plan is followed, there is a very great likelihood at first, at least, that the actual figures will be considerably out of line with the estimates, with the result that scoffers will be given further opportunity to tell you and other members of the organization how impractical the budget idea is.

What are the advantages accruing to a concern which budgets? First, a budget plan substitutes facts and figures for guesswork—a desirable thing. None of us can undertake any business operation if we have made a plan first, without doing that work better as a result of having made the plan.

Second, budgeting not only aids materially in securing co-operation but it really breeds it. A budget system will invariably assist in the co-operation and coordination of the business.

Third, the probable results are not necessarily known but at least, anticipated some time in advance. Of course, the budget is only as good as the estimate. If it looks as it business is going to be better in 1928 than 1927, or worse, as the case may be, you have at least given consideration to that before 1928 has started. You don't know, even the experts collecting large fee's don't know, but at any rate you have a reasonable assurance that conditions are likely to be this, that or the other during the coming year. Fourth, budgets help restrain unwise expenses.

Last, budgets help in the formulation of a unified financial program, and there again those of you who are in the financial end, in the treasurer's end of the business, know that if you as a financial man can go to your bank and say: These are our plans for 1928; we want a loan; here is what we expect to do with the money; here is how we expect to pay it back; and here is how we expect to get results, the bank will recognize your proposition. Banks, here in the East, at least, are more and more demanding that those who come to them with requests for loans have some kind of a plan—call it a budget or anything else you wish—which will show where the business is going, what it expects to do with the money, and how they expect to pay it back.

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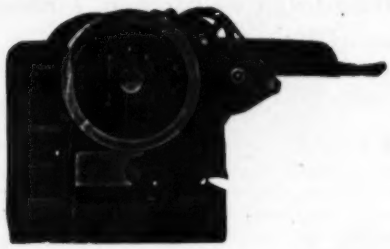
* From United Typothetae Bulletin.

[1] Asst. Professor of Management, New York University.

GIANT

RAG CUTTERS



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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Chelsea, Mass.—The Standard Box Company, 28 Gerrish Avenue, manufacturer of paper boxes and containers, has completed plans and is asking bids on general contract for a new addition to its plant, two-story, 100 x 142 feet, reported to cost close to $75,000, with equipment. It is expected to award contract and begin superstructure at an early date. Eisenberg & Feer, 46 Cornhill street, Boston, are architects.

Wabash, Ind.—The Union Fibre Company, Winona, Minn., is reported considering the construction of a new fibre-board mill on Chestnut street, Wabash, to be one-story, 50 x 100 ft., with extension 32 x 70 feet, reported to cost close to $60,000, with equipment. R. C. Tearse is president.

Hoquiam, Wash.—The Zellerbach Paper Company, San Francisco, and Fresno, Cal., is reported considering enlargements in its mill at Hoquiam, on which work has been begun, and is understood to be in negotiation with the city for sufficient water supply. The plant now under construction will be equipped for a capacity of 100 tons per day, and the projected unit will provide for an increase of more than double this amount with estimated cost placed in excess of $3,500,000.

Philadelphia, Pa.—The Keystone Index Card Company, 3225-7 Race street, manufacturer of commercial paper goods, card stocks, etc., has acquired property at the rear of present plant, 50 x 175 feet, and 50 x 100 feet, extending from 213-7 North 33rd street. Dwellings are now on the site, and it is reported that these will be razed in near future to provide for proposed expansion in factory.

Sylva, N. C.—The Mead Pulp and Paper Company, Chillicothe, Ohio, is reported to have plans maturing for a proposed new pulp and paper mill on site at Sylva, recently acquired, and will ask bids before the close of the month. It is understood that work will begin early in the spring. The project is reported to cost more than $200,000, with equipment. George H. Mead is president.

New York, N. Y.—The Ingraham Paper Box Company, recently organized by Max Goar, 38 Thatford avenue, Brooklyn and associates, with capital of $10,000, is reported perfecting plans for the operation of a local plant for the manufacture of paper boxes and containers.

Toledo, Ohio.—The Valve Bag Company, Toledo, manufacturer of paper valve bags used for lime and lime products, etc., operating under patents of the Bates Valve Bag Corporation, Chicago, Ill., is disposing of a preferred stock issue of $1,500,000, a portion of the proceeds to be used for general financing and expansion. The company operates plants at Toledo; Oakmont, Pa., and Windsor, Ont. Carl H. Hartman is vice-president and general manager.

Richmond, Va.—Officials of the Berlin & Jones Company, 547 West 27th street, New York, manufacturer of envelopes and other paper goods, have organized the Berlin & Jones Stationery Company of Virginia, Inc., to establish and operate a local plant. Property has been acquired on 22nd street, and equipment will be installed at an early date. It is understood that considerable machinery and apparatus will be removed from New York, to the new location. F. L. Schofield is president.

Ridgefield Park, N. J.—Hess & Densen, Industrial avenue, manufacturer of paper boxes and containers, have disposed of about 3 acres of land along the Hackensack River at Ridgefield Park, heretofore held with other acreage for later development. The property has been acquired by the Gulf Refining Company, New York, and will be used by that organization.

Aberdeen, Wash.—The Grays Harbor Pulp Company is reported contemplating early activity in connection with a proposed pulp and paper mill in the vicinity of Aberdeen, to specialize in the production of kraft stocks, estimated to cost more than $2,000,000, with machinery. Negotiations are said to be under way for sufficient water supply for operation. J. C. Shaw is general manager.

Lansing, Mich.—The Dudley Paper Company, Lansing, wholesaler in paper goods, is said to have preliminary plans for an extension and improvement program, including extensions in present building to double, approximately, amount of present floor space. Estimated cost has not been announced. W. C. Dudley is president and gentral manager.

Chicago, Ill.—The Wessels Division of the American Loose Leaf Manufacturing Company, 121 North Green street, has awarded a general contract to the Regan Construction Company, 228 North LaSalle Street, for a proposed new plant addition at Thirtieth street and Cottage Grove avenue. It will be one-story, 180 x 215 feet, reported to cost more than $75,000, with equipment. It is understood that a list of machinery to be installed will be arranged at an early date. Olsen & Urbain, 134 North LaSalle street, are architects.

Nashville, Tenn.—The Rock City Paper Box Company, 146 South Third street, recently organized with capital of $40,000, is said to be arranging the early operation of a local plant for the manufacture of paper containers of various kinds. The new organization is headed by Warren B. Sloane, A. W. Saxon, and Herbert Fox.

Birmingham, Ala.—The Bates Valve Bag Corporation, 8200 South Chicago avenue, Chicago, Ill., manufacturer of patented paper bags for cement, lime and kindred products, has completed plans for the construction of a new factory branch and distributing plant at Morris avenue and Fourty-fourth street, Commercial Park section, Birmingham, to be one-story, 60 x 220 feet, reported to cost more than $75,000, with equipment. General contract for building has been let to the Mackle Building Company, Birmingham; the structure is scheduled for completion early in the spring.

Montreal, Que.—The Canada Power and Paper Corporation has been organized to take over the newsprint mills and other assets of the St. Maurice Valley Corporation, Montreal, with main mill at Cape Madeline, near Three Rivers; and the Laurentide Company, Ltd., Grand Mere. The combined output of the two plants aggregates 1300 tons of news print per day. It is understood that the consolidated organization has an expansion program under consideration.

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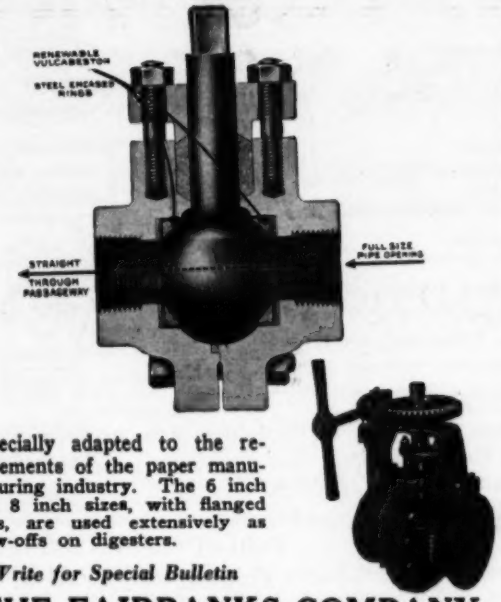

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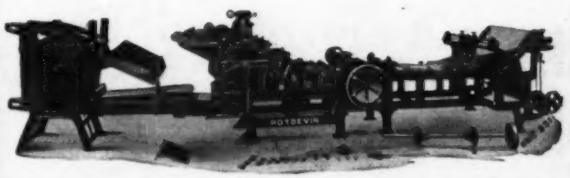

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Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 14, 1928

SUMMARY

Cigarette paper .....191 cs.
Wall paper .....81 bls., 22 cs.
Paper hangings .....73 bls., 14 cs.
Painted paper .....15 cs.
News print .....571 rolls, 96 bls.
Printing paper .....181 bls., 5 rolls, 6 cs.
Wrapping paper .....9 cs.
Packing paper .....2 bls.
Parchment paper .....2 cs.
Silk paper .....6 cs.
Tissue paper .....5 cs.
Baryta coated paper .....10 cs.
Basic paper .....111 cs.
Surface coated paper .....99 cs.
Decalcomania paper .....20 cs.
Writing paper .....2 cs.
Carbon paper .....19 cs.
Drawing paper .....45 cs.
Filter paper .....154 bls., 13 cs.
Litho paper .....40 cs.
Miscellaneous paper .....124 cs.

CIGARETTE PAPER

British American Tobacco Co., Laurentic, Liverpool, 5 cs.
P. J. Schweitzer, Pres. Polk, Marseilles, 97 cs.
Standard Products Corp., Paris, Havre, 69 cs.
The Surbrug Co., Paris, Havre, 20 cs.

WALL PAPER

Heemsoth, Basse & Co., Republic, Bremen, 6 bls., 1 cs.
F. A. Binder & Co., Republic, Bremen, 17 bls.
F. J Emmerich, Laurentic, Liverpool, 16 bls., 2 cs.
Mercantile Trust Co., Hamburg, Hamburg, 3 cs.
Bendix Paper Co., Hamburg, Hamburg, 2 cs.
Globe Shipping Co., Hamburg, Hamburg, 16 bls., 2 cs.
F. J. Emmerich, Hamburg, Hamburg, 12 bls., 3 cs.
C. Bloom, Inc., Majestic, Southampton, 2 cs.
A. C. Dodman, Jr., Inc., Majestic, Southampton, 14 bls., 7 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnewaska, London, 40 bls., 3 cs.
A. C. Dodman, Jr., Inc., Laconia, Liverpool, 33 bls.
Whiting & Patterson Co., Inc., Majestic, Southampton, 11 cs.

PAINTED PAPER

Hensel, Bruckman & Lorbacher, Paris, Havre, 15 cs.

NEWS PRINT

A. S. Zabriskie, Republic, Bremen, 96 rolls.
National City Bank, Republic, Bremen, 96 bls.
Parsons & Whittemore, Inc., Republic, Bremen, 475 rolls.

PRINTING PAPER

E. Dietzgen & Co., Hamburg, Hamburg, 6 cs.
Perkins, Goodwin & Co., Hamburg, Hamburg, 151 bls.
Keuffel & Esser Co., Hamburg, Hamburg, 5 rolls.
Guaranty Trust Co., Hamburg, Hamburg, 30 bls.

WRAPPING PAPER

Birn & Wachenheim, Devonian, Antwerp, 9 cs.

PACKING PAPER

International Forwarding Co., Republic, Bremen, 2 bls.

PARCHMENT PAPER

S. Gilbert, Republic, Bremen, 2 cs.

SILK PAPER

S. Gilbert, Republic, Bremen, 6 cs.

TISSUE PAPER

G. W. Sheldon & Co., Minnewaska, London, 2 cs.
Meadows, Wye & Co., Megantic, Liverpool, 3 cs.

BARYTA COATED PAPER

Globe Shipping Co., Republic, Bremen, 10 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Devonian, Antwerp, 99 cs.

BASIC PAPER

American Express Co., Devonian, Antwerp, 111 cs.

DECALCOMANIA PAPER

Phoenix Shipping Co., Republic, Bremen, 4 cs.
C. W. Sellers, Republic, Bremen, 1 cs.
C. W. Sellers, Hamburg, Hamburg, 2 cs.
B. F. Drakenfeld & Co., Laconia, Liverpool, 13 cs.

WRITING PAPER

The Eleto Co., Majestic, Southampton, 2 cs.

CARBON PAPER

National City Bank, City of Joliet, Hamburg, 19 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., London Exchange, London, 4 cs.
Keuffel & Esser Co., Hamburg, Hamburg, 41 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., London Exchange, London, 10 cs.
C. Schleicher Schull Co., Hamburg, Hamburg, 2 bls., 3 cs.
J. Manheimer, Majestic, Southampton, 149 bls.
A. Giese & Son, Majestic, Southampton, 3 bls.

LITHO PAPER

J. H. & G. B. Siebold, Inc., Pres. Polk, Canton, 40 cs.

MISCELLANEOUS PAPER

S. Gilbert, Republic, Bremen, 1 cs.
Friedman & Slater, Hamburg, Hamburg, 2 cs.
Keller Dorian Paper Co., Paris, Havre, 30 cs.
C. B. Richard & Co., Paris, Havre, 31 cs.
Bank of The Manhattan Co., Paris, Havre, 20 cs.
Standard Products Corp., Paris, Havre, 40 cs.

RAGS, BAGGINGS, ETC.

C. B. Richard & Co., Liberty Land, Leghorn, 433 bls. rags.
E. Butterworth & Co., Inc., Liberty Land, Naples, 27 bls. rags.
Banco Com'l Italiane Trust Co., Liberty Land, Naples, 10 bls. rags.
C. B. Richard & Co., Liberty Land, Naples, 146 bls. rags.
Castle & Overton, Icn., City of Joliet, Hamburg, 88 bls. rags.
American Exchange Irving Trust Co., Serbino, Manchester, 138 bls. bagging.
J. Cohen Son, Serbino, Manchester, 16 bls. rags.
C. R. Spence & Co., Serbino, Manchester, 192 bls. rags.
E. Butterworth & Co., Inc., Serbino, Manchester, 61 bls. bagging.
E. Mayer, Serbino, Manchester, 70 bls. bagging.
Castle & Overton, Inc., Serbino, Manchester, 55 bls. bagging.
E. J. Keller Co., Inc., Sac City, Antwerp, 166 bls. rags.
E. J. Keller Co., Inc., Sac City, Antwerp, 52 bls. bagging.
D. M. Hicks, Inc., Sac City, Antwerp, 121 bls. flax waste.
Van Oppen & Co., Republic, Bremen, 48 bls. rags.
Phila. Girard National Bank, Republic, Bremen, 114 bls. bagging.
A. W. Fenton, Inc., Republic, Bremen, 133 bls. rags.
B. D. Kaplan, Republic, Bremen, 5 bls. rags.
C. B. Richard & Co., M. Ossero, Palermo, 112 bls. bagging.
Banco Com'l Italiane Trust Co., Cherca, Naples, 70 bls. rags.
C. B. Richard & Co., Cherca, Naples, 147 bls. rags.
C. B. Richard & Co., Cherca, Messina, 108 bls. rags.
Brown Bros. & Co., Caledonia, Glasgow, 81 bls. rags.
Myers Lipman Woolstock Co., Laurentic, Liverpool, 23 bls. rags.
American Exchange Irving Trust Co., Hamburg, Hamburg, 115 bls. rags.
A. W. Fenton, Inc., Hamburg, Hamburg, 5 bls. rags.
E. J. Keller Co., Inc., M. Arnus, Barcelona, 189 bls. rags.
S. Birkenstein & Son, M. Arnus, Barcelona, 47 bls. rags.
New York Trust Co., Incemore, Leith, 77 bls. bagging.
Castle & Overton, Inc., Incemore, Scotland, 164 bls. waste.
American Over-Ocean Corp., Hague Maru, Kobe, 25 bls. rags.
Darmstadt, Scott & Courtney, Hague Maru, Kobe, 60 bls. rags.
Castle & Overton, Inc., Hague Maru, Kobe, 40 bls. rags.
E. Butterworth & Co., Inc., Hallfried, Genoa, 54 bls. rags.
Darmstadt, Scott & Courtney, Hallfried, Genoa, 40 bls. bagging.
Darmstadt, Scott & Courtney, Hallfried, Malaga, 51 bls. rags.
S. Birkenstein & Son, A. Lopez, Barcelona, 110 bls. rags.
E. J. Keller Co., Inc., Ontario, Havre, 44 bls. rags.
Castle & Overton, Inc., Serbino, England, 55 bls. bagging.
Castle & Overton, Inc., London Exchange, London, 78 bls. rags.

OLD ROPE

S. Birkenstein & Son, Idaho, Hull, 49 coils.
R. Canovai figli, Cherca, Genoa, 224 coils.
New York Trust Co., Incemore, Leith, 104 coils.
N. E. Berzen, Hallfried, Barcelona, 36 coils.

CASEIN

National City Bank, Vandyck, Buenos Aires, 792 bags.
T. M. Duche & Sons, Commercial Trader, Buenos Aires, 417 bags, 25,020 kilos.

WOOD PULP

M. Gottesman & Co., Inc., Schenectady, Kotka, 930 bls. wood pulp.
American Exchange Irving Trust Co., Ida, Trieste, 294 bls. wood pulp.

WOOD PULP WADDING

Bendix Paper Co., Hamburg, Hamburg, 25 bls.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 14, 1928

V. Galaup, Liberty Land, Leghorn, 74 bls. rags.
Perkins, Goodwin & Co., Sac City, Antwerp, 23 cs. printing paper.
American Exchange Irving Trust Co., Sac City, Antwerp, 241 bls. rags.
D. I. Murphy, Sac City, Antwerp, 38 bls. thread waste.
V. Galaup, Sac City, Antwerp, 112 bls. rags.
J. A. Steer & Co., Sac City, Antwerp, 273 bls. rags.
E. J. Keller Co., Inc., Sac City, Antwerp, 145 bls. rags.
E. A. Stone & Co., Sac City, Antwerp, 136 bls. rags.
Tradesmen's National Bank, Sac City, Antwerp, 77 bls. rags.
V. Galaup, Cherca, Genoa, 87 bls. rags.
Grace National Bank, Cherca, Genoa, 150 bls. rags.
J. Lang Paper Co., London Exchange, London, 386 bls. rags.
American Over-Ocean Corp., Hague Maru, Kobe, 25 bls. rags.
O'Neill Bros., Hague Maru, Kobe, 45 bls. rags.
Phila. Girard National Bank, Hague Maru, Kobe, 50 bls. thread waste.
D. I. Murphy, Hague Maru, Osaka, 400 bls. rags.
D. I. Murphy, Canadian Highlander, Melbourne, 48 coils, 3 bls. rope.
S. Birkenstein & Son, Hallfried, Marseilles, 106 bls. rags.
Robert Blank, Hallfried, Marseilles, 344 bls. rags.
Robert Blank, Hallfried, Marseilles, 189 bls. carpets.
S. Birkenstein & Son, Hallfried, Barcelona, 98 bls. rags.
S. Birkenstein & Son, Hallfried, Valencia, 408 bls. rags.
S. Birkenstein & Son, Hallfried, Valencia, 21 bls. old rope.
R. Canovai figli, Hallfried, Leghorn, 206 bls. rags.
Castle & Overton, Inc., Pacific, Sweden, 600 bls. wood pulp.
Castle & Overton, Inc., West Harcuvar, Germany, 130 bls. rags.
Castle & Overton, Inc., Holstein, Germany, 24 bls. rags.
Castle & Overton, Inc., Altmark, Germany, 1,200 bls. wood pulp.
E. J. Keller Co., Inc., Altmark, Hamburg, 34 bls. rags.
E. J. Keller Co., Inc., West Alsek, Bremen, 58 bls. rags.

BOSTON IMPORTS

WEEK ENDING JANUARY 14, 1928

Brown Bros. & Co., Idaho, Hull, 384 coils old rope.

(Continued on page 64)

QUALITY PULPS

"HAFSLUND BEAR"
Bleached Sulphite

"FORSHAGA"
Bleached Sulphite

"HURUM SPECIAL"
Extra Strong Kraft

KOOS BAC NORWAY SPECIAL

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Kalamazoo, Mich.

Imports of Paper and Paper Stock

(*Continued from page 62*)

Guaranty Trust Co., Com'l Trader, Buenos Aires, 334 bags casein, 20,040 kilos.
E. J. Keller Co., Inc., Bellepline, Rotterdam, 39 bls. rags.
E. J. Keller Co., Inc., P. Luckenbach, ——, 176 bls. bagging.
E. J. Keller Co., Inc., West Harcuvar, Hamburg, 113 bls. rags.
E. J. Keller Co., Inc., West Harcuvar, Hamburg, 55 bls. rag pulp.
Castle & Overton, Inc., West Harcuvar, Germany, 97 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING JANUARY 14, 1928

Castle & Overton, Inc., Quistconck, France, 238 bls. rags.
Castle & Overton, Inc., Syros, Belgium, 228 bls. rags.

NORFOLK IMPORTS

WEEK ENDING JANUARY 14, 1928

Scandinavian Pulp Agency, Inc., Schenectady, Gothenburg, 2,794 bls. kraft pulp, 558 tons.
Scandinavian Pulp Agency, Inc., Schenectady, Gothenburg, 508 bls. sulphate, 101 tons.
Scandinavian Pulp Agency, Inc., Schenectady, Gothenburg, 274 bls. sulphite, 54 tons.
Castle & Overton, Inc., Altmark, Germany, 170 bls. wood pulp.

BALTIMORE IMPORTS—10 CHELT CAPS..

WEEK ENDING JANUARY 14, 1928

Pagel, Horton & Co., Inc., Schenectady, Umea, 3,600 bls. sulphite, 610 tons.
Johanson, Wales & Sparre, Inc., Schenectady, Umea, 2,100 bls. sulphate, 304 tons.
Pagel, Horton & Co., Inc., Schenectady, Ornskoldsvik, 6,990 bls. sulphate, 1,183 tons.
Pagel, Horton & Co., Inc., Schenectady, Ornskoldsvik, 2,370 bls. sulphite, 401 tons.
E. M. Sergeant & Co., Schenectady, Gothenburg, 299 bls. dry soda pulp, 50 tons.
Parsons & Whittemore, Inc., Schenectady, Gothenburg, 30 bls. wood pulp.
Parsons & Whittemore, Inc., Orion, ——, 763 bls. wood pulp.
Parsons & Whittemore, Inc., Orion, ——, 610 bls. wood pulp.
Parsons & Whittemore, Inc., Orion, ——, 1,225 bls. wood pulp.
Parsons & Whittemore, Inc., Orion, ——, 388 bls. wood pulp.
Parsons & Whittemore, Inc., Kellerwald, ——, 300 bls. wood pulp.
Parsons & Whittemore, Inc., Kellerwald, ——, 1,228 bls. wood pulp.
Castle & Overton, Inc., Altmark, Germany, 1,400 bls. wood pulp.

Forest Research Bill Hearings

The Senate Committee on Agriculture and Forestry and the House Committee on Agriculture will hold hearings upon the McSweeney-McNary Forest Research bill in Washington during the week beginning Monday, February 27. The Senate Committee hearings will be on February 27-28 and the House Committee ings February 29-March 3. In the Senate the bill is known as S-1183 and in the House as H.R.6091, the two being identical.

Arrangements will also be made on the afternoon of either February 28 or 29 to present a brief outline of the forest research program to the President, and in somewhat more detail to the Director of the Budget, since the recommendations of the Department of Agriculture in regard to it will have to come through the Budget. With the entire week set aside for these Congressional hearings, there is opportunity to present very strong detailed support for this program of general forest research.

The National Forestry Program Committee of which R. S. Kellogg is chairman and Warren B. Bullock is secretary, has been asked to arrange for the presentation of arguments at the hearings.

Salesmen's Annual Meeting and Banquet

Plans for the ninth Annual Banquet and Meeting of the Salesmen's Association of the Paper Industry are progressing rapidly under the direction of George H. Attfield, Chairman of the Banquet Committee. The speaker at the banquet on Monday evening, February 20, will be F. D. Van Amburgh, editor and publisher of *The Silent Partner*, a monthly magazine with a wide circulation through direct subscription only. He is well and favorably known as an inspiring speaker on topics of direct interest to salesmen and members of the association who have heard him before speak highly of his ability to combine entertainment with instruction.

Supplementing Mr. Van Amburgh's address the Banquet Committee is planning a surprise entertainment of a type certain to meet with general approval.

At the annual business meeting on Thursday morning, February 23, it is planned to have a prominent man from one of the country's key industries, speak on his own industry's prospects for 1928 and their relation to and effect on general business.

Longview Fibre Co. Ships East

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., January 12, 1928.—The Longview Fibre Company, Longview, Wn., on December 28, loaded on the boat Virginian of the American-Hawaiian line, 250 tons of pulp products for points at Boston, Philadelphia and New York.

American Multitone Receivership

[FROM OUR REGULAR CORRESPONDENT]

COHOES, N. Y., January 16, 1928.—After a hearing before Federal Judge Frank Cooper at Albany on an order to show cause why Louis F. O'Neill, of Albany, should not be made permanent receiver for the American Multitone Papers Corporation, of this city, the case was adiourned for two weeks during which time those opposing the receivership will have time to give written consent to unsecured creditors being given the preference of payment.

The case involves an action started by Robert C. and John Kerr, of New York City, the former president of the American Thread Company, against the Multitone Corporation. It is a case in equity for a sequestration of the firm's assets which consist principally of patents for the manufacture of multitone papers and certain royalties derived from the manufacturer of this paper under these patents. The order recently signed by Judge Cooper, which was returnable at Albany, was to show cause why Mr. O'Neill's receivership should not be made permanent.

Thomas F. O'Connor, Waterford attorney, opposed the receivership being made permanent and asked that it be discontinued. He has a claim for professional services amounting to $2,600. Attorneys Edward A. Mealey, representing the Harmony Mills, John F. McClean, the Sweet & Doyle foundry, and Reginald Brooks, the estate of William H. Loop, unsecured creditors of this city, consented to making Mr. O'Neill permanent receiver, providing these concerns received preference in payment of claims. The Kerrs were represented by Edwards, Murphy & Minton, of New York.

Union Bag Officials Honored

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., January 16, 1928.—An interesting meeting of Local No. 2 Pulp, Sulphite and Paper Mill Workers' Union was held here during the past week with officials of the Union Bag and Paper Corporation, of this village, as guests of honor. H. W. Sullivan, second vice president of the union, presided and in the opening address spoke of the close co-operation between the unions and the corporation.

George S. Witham Sr., general manager of the Union Bag and Paper Corporation, addressed the meeting and during his talk related a number of his experiences with the unions telling of their value to the worker. Other speakers included Thomas Hanna, plant superintendent of the Union Bag, George Wheeler, of the printing department, Alexander Farrant, of the Carpenters' Union, Perry Oldham, president of the Papermakers' Local Union, and International President John P. Burke, of the Pulp, Sulphite and Paper Mill Workers' Union.

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"If you will put a Jenkins Valve on the worst place you can find, where you cannot keep other valves tight, and if it is not perfectly tight, or does not hold steam, oils, acids, water, or other fluids, longer than any other valve, *you may return it and your money will be refunded.*"

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SINCE 1864

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For making Toilet and Paper Towel Rolls
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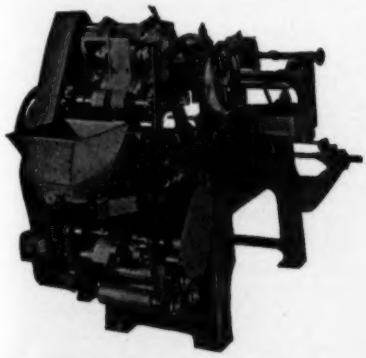

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New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, January 18, 1928.

Conditions in the local paper market are gradually improving and the demand for the various grades was more active during the past week than at any time since the holidays. Prices are being well maintained, in most instances, and reports of concessions are infrequent. Sales organizations of the leading paper houses are generally optimistic and are preparing for a strenuous campaign during the current year.

Consumption of news print is proceeding in a satisfactory manner. Contracts for the current year are being booked at the same quotations which ruled in 1927. According to the News Print Service Bureau, adding to the production of the regular news print mills reporting monthly throughout the year, the small amount made by mills whose product is chiefly other grades, the total North American output of news print paper in 1927 was 3,789,433 tons, of which 2,086,949 tons was made in Canada, 1,485,495 tons in the United States, 202,852 tons in Newfoundland and 14,137 tons in Mexico. The Canadian output was 11 per cent more than in 1926, that in the United States 12 per cent less, with a gain of 9 per cent in Newfoundland and 5 per cent in Mexico, making a total increase of 23,595 tons, or six-tenths of one per cent.

More interest is now being evinced in the various grades of paper board and the spot demand is particularly good. Prices are holding up to schedule. The fine paper market is also showing signs of recovery from the holiday slackness. Wrapping paper is in better request than for some weeks and the coarse paper market in general is in a sound position.

Mechnical Pulp

Demand for ground wood is moderately active. Supplies are apparently sufficient for local requirements. Prices remain steady and unchanged. Foreign mechanical pulp is inclined to become firmer due to conditions abroad. Manufacturers of ground wood are generally anticipating a satisfactory year for their industry.

Chemical Pulp

The chemical pulp market is practically unchanged, although the undertone is much firmer, due to the lock-out in the Swedish Pulp mills and the probability that production will be reduced this year. Now that inventories are out of the way the demand from the mills will probably be greatly accellerated in the near future. Prices remain unaltered from the previously reported basis.

Old Rope and Bagging

Both domestic and imported manila rope have only been in moderate request of late. Accumulations are said to be limited, however, and the market will probably become much firmer when the demand from the mills becomes more active. Bagging is moving in a normal manner and an improvement has been noticed in the demand for roofing bagging.

Rags

More interest is developing in the rag market now that the inventory season is drawing to a close. Domestic roofing rags are in steady request at the scheduled prices. Imported rags are still moving rather slowly but a general improvement in the situation is confidently predicted by many observers in the near future.

Waste Paper

Paper stock dealers are anxiously following the Swedish pulp mill situation as should the employers and workers fail to come to an agreement before long the waste paper market cannot fail to be affected. Book stock is still in particularly good request while the mills are gradually becoming more interested in most of the grades handled by the local dealers.

Twine

The twine market appears to be marking time at present. Most of the transactions recorded lately have been along routine lines. Prices are generally holding up to former levels. The demand for wrapping paper is reported to be improving after the usual holiday lull, and if this condition continues, the twine market is sure to benefit.

Dudley Paper Co. To Double Space

LANSING, Mich., January 16, 1928.—Plans for a supplementary building which will nearly double its present floor space are a part of the outlook of the Dudley Paper Company for 1928. Construction will start in the spring.

In spite of the fact that wholesale paper prices have been lower in the past year than in 1926, gross sales of the local firm equaled those of a year ago, indicating a larger volume of business than that of the previous 12 months.

Being the most centrally located paper house in Michigan, the Dudley Paper Company has extended its service to every part of the lower peninsula excepting Detroit. Addition of two salesmen to the force during the past year was necessary to take care of the increased trade.

Officers of the company are W. C. Dudley, president and general manager; C. C. Woodruff, vice president; R. Guy Brownson, vice president; Fred J. Weissinger, secretary and sales manager; Clare W. Howland, treasurer and credit manager.

Garrett Schenck Left $3,177,000

BANGOR, Me., January 16, 1928.—The will of Garret Schenck, who was president of the Great Northern Paper Company, was filed here for probate today, disposing of an estate estimated at $3,177,000.

With the exception of a $5,000 bequest to Wesley R. Smith of Boston and an annuity of $2,000 to the testator's sister, Caroline C. Schenck, from a trust fund of $50,000, the entire estate is left in trust to the testator's wife, Emma C. Schenck. Upon her death the trust will be held for the benefit of three children of the testator and the widow of Mr. Schenck's son, Garret, Jr.

The testator's children are Mrs. J. S. Pecil of Nashville, Tenn.; Mrs. George Button of Walpole, Mass., and Hibben Van Kydeck Schenck of Newton, Mass.

Gould Paper Co. Second Largest Taxpayer

LOWVILLE, N. Y., January 16, 1928.—According to the taxes assessed by the board of supervisors on corporations in Lewis county, the Gould Paper Company is the second largest taxpayer in the county, its corporation tax being $26,194.26. In the town of Oseola the Gould Paper Company will pay more than one-half of the total taxes, the paper company's assessment being $11,185.

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FAMOUS 5 X C JACKETS
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Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, January 18, 1928.

Trading in the local chemical market was fairly active during the past week. Contract withdrawals continue to move at a steady pace. The tonnage of orders booked so far this year is heavy enough to denote the probability that the present year will at least prove as good as the preceding twelve months. Prices are generally being well maintaind, in most instances, and shading is infrequent.

BLANC FIXE.—The blanc fixe market is in a sound position. Demand for both the pulp and the powder is persistent and prices are being well maintained at the previously quoted levels. The pulp is still quoted at $60 per ton, in bulk, while the powder is selling at from 4 cents to 4¼ cents a pound, in barrels, at works.

BLEACHING POWDER.—While business in the bleaching powder market has quietened down somewhat, the market continues to exhibit a strong undertone. Contract withdrawals are proceeding in a normal manner for the season. Bleaching powder is still offered at from $2 to $2.35 per 100 pounds, in large drums, at works, according to quantity and size of contract.

CASEIN.—Some improvement was noticed in the casein market and the demand for both the domestic and the imported product has been quite active. Domestic casein is still selling at from 17½ cents to 18¾ cents a pound. Imported casein is quoted at from 18 cents to 18½ cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Although production of caustic soda has been heavy of late, manufacturers are reported to be well sold ahead on contract business. Prices are holding up to schedule. Solid caustic soda is quoted at from $2.90 to $2.95 per 100 pounds. The flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Steadiness prevails in the china clay market. Shipments against contract continue to go forward in a satisfactory manner. Prices remain unaltered. Imported china clay is still selling at from $15 to $25 a ton, in bulk, ship side. Domestic paper makers' clay is quoted at from $8 to $9 a ton, at mine and pulverized at from $10 to $12 a ton.

CHLORINE.—Liquid chlorine was in good request during the past week and manufacturers are generally well sold ahead. Contract shipments were well up to average. Prices remain unchanged. Chlorine is quoted at 3½ cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¾ cents to 4 cents a pound.

ROSIN.—The rosin market continues to exhibit a firm tendency, due to continued light receipts and persistent buying. At the naval stores, the grades of gum rosin used in the paper mills are now selling at from $10 to $10.25 per 280 pounds, ex dock, in barrels. Wood rosin has advanced to $7.65 per 280 pounds, in barrels, southern shipping points.

SALT CAKE.—Conditions in the salt cake market are generally favorable. An excellent volume of contract orders have already been booked for 1928 delivery. Quotations remain steady and unchanged. Salt cake is quoted at from $18 to $19 a ton, in bulk, at works. Chrome salt cake is offered at from $14 to $15 a ton, in bulk, at works.

SODA ASH.—Supplies of soda ash are moving into consumption in heavy volume. Demand for this product is excellent and most of the contract business for the current year has apparently been secured. Prices are holding up to previous levels without difficulty. Contract prices of soda ash, in car lots, at works, rule as follows: in bulk, $1.15; in bags, $1.32; and in barrels, $1.55.

STARCH.—Consumption of starch is proceeding along normal lines and the market is moderately active. Shipments against contract are proceeding in a satisfactory manner. Quotations remain unaltered despite the increased price of raw materials. Special paper makers' starch is still quoted at $3.07 per 100 pounds, in bags, and at $3.34 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—The sulphate of alumina market was fairly active during the past week. The demand was somewhat broader and prices were steady to firm. Commercial grades of sulphate of alumina are selling at from $1.40 to $1.45 per 100 pounds. The iron free is quoted at from $2 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Contract withdrawals of sulphur have been moving at a steady pace. Demand is well sustained and the market is in a very firm position. Prices are holding up to the schedule which has been in force for some considerable time. Sulphur is quoted at from $18 to $19 a ton, in bulk, at mine, according to quantity. The spot quotation is $20 a ton.

TALC.—No change of moment has been recorded in the talc market of late. Supplies of this product are moving into consumption in a normal manner for the time of the year. Prices are unaltered. The quotation on domestic talc ranges from $16 to $18 a ton, in bulk, at eastern mines. French talc is selling at from $18 to $22 a ton, in bags, ship side.

Berkshire Hills Paper Co. Account Allowed

[FROM OUR REGULAR CORRESPONDENT]

PITTSFIELD, Mass., January 17, 1928.—Judge William A. Burns in Superior Court sitting here last Tuesday allowed the account of Henry L. Harrington, temporary receiver of the Berkshire Hills Paper Company, from June 20 to November 20, 1926. The petition was opposed by Attorney Fred R. Shaw of Adams who represented the town for $30,000 due in back taxes of 1925-6-7, and by Attorney William J. Donovan also of Adams who appeared for the First National Bank of that town, holder of first mortgage on the property.

Judge Shaw told the Court that he would like to have an opportunity to look over the various items in the report which he had not yet had time to do. Judge Burns called his attention to the fact that the report was filed with the Clerk of Courts December 5 last and that notices to that effect were sent to all the cerditors, so that it seemed to the Court that time enough had been given. If it were the final report, it would be a different matter, Judge Burns said.

A general discussion of the company affairs followed the talk on the petition. Attorney Donovan said that it was time to bring things to a crisis for they had been just "going along" up to the present time. He said he could see no hope of reorganization by the bondholders. "Mr. Harrington has put his whole heart and soul into this concern," said Attorney Donovan, "in an unsuccessful effort to make it go. I understand that only one bondholder has subscribed to the reorganization plan and there are only five more days to go. I think that if the town counsel, Attorney Rosenthal, and I get together we can decide upon a plan of action. I think something ought to be done immediately to save what equity there is in the property for the creditors."

Frank Sullivan Speaks on Offset Work

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, January 17, 1928.—Frank Sullivan of the Chatfield & Woods Company, paperdealers, Cincinnati, was the principal speaker at the meeting of the Printing House Craftsmen January 19, at the new Van Cleve hotel, Dayton.

The Dayton master printers commemorated the anniversary of the birth of Benjamin Franklin at this meeting and a paper man was chosen to pay tribute to the character who made the craft famous.

Mr. Sullivan chose a lithography topic and spoke about offset work and covered all phases of the industry, including plates, printing and modern improvements. He has been a student of lithography for many years and his talk proved of decided interest.

An interesting feature was a display of lithography from all parts of the world which Mr. Sullvan has collected over a long period of time.

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For Brown Paper Mill Co. ..... 3430 H.P.
Central Paper Co., Muskegon, Mich., four orders, total ..... 3100 H.P.
Philadelphia Paper Mfg. Co., Phila., three orders, total ..... 2400 H.P.
Jessup & Moore Paper Co., Phila., four orders, total ..... 4750 H.P.
Ontario Paper Co., Ltd.
For Daily Newspaper Co., North Tonawanda, N. Y. ..... 2034 H.P.
Filer Fibre Company, Filer City, Mich. ..... 1500 H.P.
John Lang Paper Co., Philadelphia, Pa..... 416 H.P.
Bayless Manufacturing Corp., Austin, Pa..... 1300 H.P.
Northern Board & Paper Co., San Francisco, Cal., two orders, total ..... 400 H.P.
Crown Willamette Paper Co., San Francisco, Cal., two orders, total ..... 750 H.P.
Delaware Hard Fibre Co., Wilmington, Del., two orders, total ..... 920 H.P.
Kieckhefer Container Co., Delair, N. J. ..... 1800 H.P.

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50 Church St.,
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Market Quotations

Quoted by Hepburn & Co., 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Advance Bag & Paper, 7s 1945	105	107
A. P. W. Pulp & Power, 7s 1945	101	102
American Writing Paper, 6s 1947	80	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	85	90*
Beaver Products Corp., 7½s 1942	106	109
Bedford Pulp & Paper, 6½s 1942	98½	None
Brown Paper Co., 1st 5½s 1946	96½	99
Bryant Paper Co., 6s 1942	100½	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper, 7s 1933	85	None
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	99	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	95	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	100	102
Donnaconna Paper, 6s 1940	101	102½
Dells Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	89	91
Eddy Paper, 7½s 1931	101	103
Escanaba Paper Serial, 6s 1928	99¾	...
Filer Fibre Serial, 7s 1926-39	95	...
Fort Orange Paper, 7s 1942	99	102
Fox River Paper, 7s 1931	99	...
Gair Company, 5½s 1942	96	99
Gilbert Paper Co., 6½s 1926-29	91	None
Hammermill Paper, 6s 1939	100	103*
Hoberg Paper & Fibre, 7s 1937	94½	96
Itaska Paper & Prairie River Power, J+5½s 1926-38	99	101
Itaska Paper, 1st 6s 1933-38	99	101
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	100	103
Menasha Printing & Carton, 6½s 1939	99½	...
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekoosa Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	104	...
Paepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	96½	98½
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
River Raisin Paper, 6s 1936	96	...
Spanish River Pulp & Paper, 8s 1941	108	110
Stevens & Thompson Paper, 6s 1942	93	95
St. Anne Paper, 6½s 1946	99	101
St. Croix Paper, 5s 1926-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	99½	101
Talt Paper & Color Industries, 6s 1934	90	95
Taggart Bros. Co., 6s 1944	94	97
Ticonderoga Pulp & Paper, 5s 1930	94	98
Ticonderoga Pulp & Paper, 6s 1940	99	101
Warren (The S. D.) Company, 6s 1945	99	101
Wotab Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	90	...
Whitaker Paper, 7s 1942	106	108

STOCKS	BID	ASKED
American Box Board, Pfd.	8	10
American Box Board, Com.	8	10
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P., Pfd.	54	58
Brompton Pulp & Paper, 8% Pfd.	100	102
Brown Corpn., 7% Pfd.	100	104
Champion Fibre, 7% Pfd.	106	112
Diem & Wing, 7% Cum. Pfd.	90	...
Donnaconna Paper, Com.	75	80
Donnaconna Paper, Pfd.	104	112
Eastern Mfg. Co., 1st Pfd.	28	33
Great Northern Paper, Com.	70	75
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	160	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	94	98
Midwest Box Co., Pfd. 6%	92	97
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	160	170
Oxford Paper Co., Pfd.	105	108
Penobscot Chemical Fibre, Com.	65	75*
Richardson, 7% Pfd.	160	...
Rubberoid	74	77
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	101½	104½
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper, Com.	50	55
West Virginia Pulp & Paper, Pfd.	101	103
Whittaker Paper, 7% Cum. Pfd.	98	103

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.50	@ 4.75
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	50.00	@52.50
Straw	53.50	@57.50
Chip	47.50	@50.00
Binders' Boards	70.00	@75.00
Sgl. Mla. Ll. Chip.	57.50	@60.00
Wood Pulp	80.00	@85.00
Container	67.50	@72.50

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@30.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.40	@ 4.25
Easy Bleaching	2.65	@ 2.80
No. 1 strong unbleached	2.40	@ 2.65
Mitscherlich unbleached	2.55	@ 3.25
No. 2 strong unbleached	2.30	@ 2.40
No. 1 Kraft	2.55	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.65	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.20	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.25	@ 3.70
Kraft (Domestic)	2.60	@ 3.30
Soda Bleached	3.25	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.75	@12.25
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.50	@ 1.60
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.25
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.85	@ 1.95
Dark Cottons	1.65	@ 1.70
Shoppery	1.55	@ 1.60
French Blues	2.25	@ 2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.65
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.30	@ 1.50
Manila Rope—		
Foreign	3.25	@ 3.60
Domestic	3.75	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.40	@ 3.65
Hard, White, No. 2	2.90	@ 3.05
Soft, White, No. 1	2.75	@ 2.90
Flat Stock—		
Stitchless	1.40	@ 1.45
Overissue Mag.	1.40	@ 1.45
Solid Flat Book	1.30	@ 1.35
Crumpled No. 1	1.05	@ 1.10
Solid Book Ledger	1.90	@ 2.10
Ledger Stock	1.70	@ 1.75
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.85	@ .95
Container	.70	@ .80
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.95	@ 2.05
News—		
No. 1 White News	1.70	@ 1.80
Strictly Overissue	.80	@ .90
Strictly Folded	.55	@ .60
No. 1 Mixed Paper	.45	@ .50
Common paper	.30	@ .35

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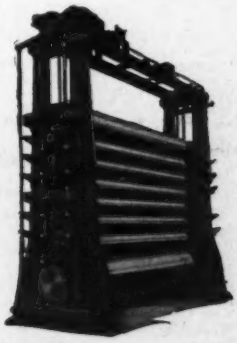

Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¼
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	—
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	3.60	@	3.70
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.20	@	1.30
Blanks	1.70	@	1.80
Krafts	1.90	@	2.00
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.50	@	1.65
Print Manila	.90	@	1.00
Folded News (overissue)	.60	@	.70
Old Newspapers—			
No. 1	.60	@	.70
No. 2	.55	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¼	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05¼	@	.05½
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	60.00	@	65.00
News Board	47.50	@	50.00
Chip Board	42.50	@	45.00
Wood Pulp Board (Carload Lots)	4.50	@	5.00
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	66.00	@	68.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	08
New Blue	—	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	03	@	.03¾
New Canvas	.08	@	.09½
New Black Mixed	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.25	@	2.00
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.50	@	1.75
Wool Tares, heavy	3.00	@	3.50
Mixed Strings	1.25	@	1.35
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	—	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.75	@	3.00
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.65	@	1.75
No. 1 Books, heavy	1.25	@	1.30
No. 2 Books, light	.85	@	.90
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.15	@	1.20
Container Manila	.90	@	1.00
Old Kraft	2.00	@	2.20
Common Paper	.55	@	.60
No. 1 Mixed Paper	.60	@	.75
Straw Board, Chip	.65	@	.75
Binders Board, Chip	.65	@	.75
Overissue News	.75	@	.85
Old Newspaper	.60	@	.70

Domestic Rags (Old)

White, No. 1—			
Repacked	4.50	@	5.25
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	.02¾	@	.02¾
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.60	@	1.75
Black Stockings	3.50	@	3.75
Roofing Stock—			
No. 1	1.75	@	1.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07¾	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11¾
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.04¼	@	.05
Common Bogus	.02¾	@	.02¾
Delivered New England points			
Straw Board, rolls	.009		57.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp lined board	55.00	@	60.00
Single White, patent coated board bender	75.00	@	82.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.10
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.60	@	—
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	1.95	@	2.00
No. 1 Books, Heavy	1.35	@	1.45
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.25	@	1.35
White Blank News	1.50	@	—
Old Kraft	2.00	@	2.10
Print Manila	.70	@	.80
No. 1 Mixed Paper	.50	@	.52½
Overissue News	.70	@	.80
Old Newspapers	.60	@	—
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.50
Domestic	1.50	@	1.60
Manila Rope and Strings—			
Foreign	—	@	3.00
Domestic	—	@	3.50
Mixed Strings	.90	@	1.00
Scrap Burlaps	1.37½	@	1.50
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	2.25	@	2.37½

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.11	@	.11½
Silesias, No. 1	.07	@	.07½
New Unbleached	.09½	@	.10
Fancy	.05	@	.05½
Washable	.04	@	.04½
Cottons—Acording to			
Blue Overalls	.07	@	.07½
Blue Overalls	.07½	@	—
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04¾	@	.05¼
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	5.50	@	5.75
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.12½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.70	@	—
No. 2	1.50	@	—
No. 3	1.10	@	—
No. 4	1.10	@	—

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.60	@	1.65
New No. 1 Shirt Cuttings	11.00	@	11.50
Dutch Blues	2.00	@	—
Lace Curtains	5.25	@	5.50
New Checks & Blues	4.50	@	4.65
Old Fustians	1.80	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.75	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rag	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground wood	25.00	@	28.00
Sulphite easy bleaching	58.00	@	61.00
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	3.00	@	—
White Blk, News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.47½	@	.52½
No. 1 Mixed Paper	.60	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12½
Fancy Shirt Cuttings	.06	@	.06½